DOCUMENT RESUME

ED 402 301 SP 037 063

TITLE	The Student Issue: Original Articles by Student Gammans. 1996 Edition.
INSTITUTION	Eta Sigma Gamma, Muncie, Ind.
PUB DATE	96
NOTE	66p.; Series previously known as "Eta Sigma Gamma Series."
AVAILABLE FROM	Eta Sigma Gamma, 2000 University Avenue, Muncie, IN 47306.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	The Health Education Monograph Series; v14 n2 1996
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Acquired Immune Deficiency Syndrome; Adults; American Indians; Class Size; Community Involvement; *Computer Uses in Education; Elementary Secondary Education; Exercise; *Health Education; Health Promotion; Higher Education; Latin Americans; *Minority Groups; *Parent Child Relationship; Preservice Teacher Education; Smoking
IDENTIFIERS	*Health Risk Appraisal

ABSTRACT

This issue presents 11 research papers submitted by students: (1) "An Exploration of Problem-Behavior Theory" (Casey Ann Reeves); (2) "HIV/AIDS Prevention, Intervention, and Education Techniques Used within the American Indian Population" (Ursule R. Smith); (3) "Parent-to-Child Conflict Tactics in Late Adolescence" (James Thomas Broadbear); (4) "Process Evaluation of a Nutrition Based Program for Low-English Proficient Latinos in English-as-a-Second-Language (ESL) Classes" (Ofelia Alvarado); (5) "Potential Solutions to the Problem of Adolescent Smoking" (Susan S. Thomas); (6) "Computer Communications Technology and the Future of Health Education" (Lisa Nicole Pealer); (7) "Advantages and Limitations of Health Risk Appraisals (HRAs) in Promoting Health Behavior Change" (Mariaclara Ecora F. Bago); (8) "Knowledge of Universal Precautions by Student Teachers and Cooperating Teachers in Illinois: Implications for Pre-service Education" (Roberta L. Lyons and Debra L. O'Connell-Bartges); (9) "Promoting Exercise Behaviors in Older Adults" (Jean Henry); (10) "Collective Efficacy, Community-based Coalition, and Communities of Color" (Pebbles Fagan); (11) "Teaching Large Classes: Commentary from an Associate Instructor" (Lisa K. Angermeier). References are included at the end of each chapter; a list of reviewers and information about contributors are appended. (ND)

Volume 14 Number 2
1996

The Health Education Monograph Series

Guest Editor
Martin L. Wood, Ph.D.
Assistant Professor
Department of Physiology and Health Science
Ball State University
Muncie, IN 47306

Editor
Monograph Series
Mohammad R. Torabi, Ph.D., M.P.H., CHES
Professor and Assistant Chair
Department of Applied Health Science
Indiana University
Bloomington, Indiana 47405

Eta Sigma Gamma wishes to gratefully acknowledge the
John P. McGovern Foundation for its generosity
in helping to make this monograph series possible.

The Health Education Monograph Series is published by Eta Sigma Gamma, the National Professional Health Education Honorary, 2000 University Avenue, Muncie, Indiana 47306. A non-profit organization, Eta Sigma Gamma is dedicated to the elevation of standards, ideals, competence, and ethics of professionally trained men and women in the Health Science discipline. Third class, bulk rate postage paid at Muncie, Indiana.

The Student Issue

ORIGINAL ARTICLES
BY
STUDENT GAMMANS
1996 EDITION

Volume 14 Number 2

1996

Published by Eta Sigma Gamma

National Professional Health Education Honorary

National Executive Committee
Eta Sigma Gamma

Foreword

I was deeply honored with the responsibility of Guest Editor for this year's **Student Issue**. Everyone who has been touched by this experience has benefited from it.

Faculty reviewers gained an invaluable perspective on the capabilities and needs of their undergraduate and graduate students. Many universities mandate a "writing-across-the-curriculum" approach to undergraduate education, and this exercise provided an opportunity for outside reviewers to evaluate the success of such programs among health education students. As a faculty member, I was both encouraged by the level of skill demonstrated by student contributors and alerted to several specific needs for future curriculum development. Furthermore, faculty and students alike benefit from the mentoring process required for the graduate student's manuscript to evolve to the level of publication.

Undergraduate and graduate students have had the chance to really hone their writing skills, clarify content, and receive professional feedback to guide them along their particular career path. The process of developing a manuscript for publication is lengthy and time-consuming, and has been compared by some (probably less personally enlightened types) to childbirth. Students have had to justify their assertions, re-examine the literature, and ferret out problem details, all motivated by another individual's perspective. Even those authors whose works were not accepted benefited from aspects of this process.

And I, the Guest Editor, have also benefited from my stint in the editor's chair. I have gained new insight into the administrative chore of journal publication, enhanced professional friendships where only acquaintance existed before, and learned about my own considerable shortcomings. Foremost among the benefits I have derived from my editorship, however, is the inspiration I have absorbed from the hard work and dedication of the newest batch of health educators being trained at our colleges and universities. My heartfelt thanks to all the reviewers whose time and input were greatly appreciated, and to Dr. Mohammad Torabi for deeming me worthy of this task. Thank you also to the administrative staff in the Department of Physiology and Health Science at Ball State University, whose occasional assistance with mailing and duplication was a lifesaver. Keep up the good work, one and all!

Martin L. Wood, PhD, Guest Editor
The Health Education Monograph Series
Ball State University

Preface

On behalf of your National Executive Committee of **Eta Sigma Gamma (ESG)**, I would like to offer my sincere congratulations to all of the students who submitted research papers for publication consideration in this student issue of ***The Health Education Monograph Series***. This is a strong indication of our students' commitment to research. I would like to extend my genuine appreciation to Dr. Martin Wood for the excellent job he has done as our Guest Editor for this issue. Further, I wish to thank all faculty advisors who encouraged and worked with the students in the manuscript preparation, Terri King for her assistance in preparing the final publication, and Joyce Arthur for her technical assistance. A special thanks is also extended to Ms. Donna Ganion, Executive Director of **ESG** and Ms. Meg Wood, Director of Publications of **ESG**, for their general assistance. Certainly, I must thank the Department of Applied Health Science of Indiana University for their kind support of the publication of the **Monograph Series**.

I would like to invite all faculty to encourage students to submit research papers for the next student issue of ***The Health Education Monograph Series***. The deadline for submission is January 10, 1997. Our guest editor for the next student issue is Dr. Kweethai C. Neill at Sam Houston State University, Department of Health and Kinesiology, P.O. Box 2176, Huntsville, TX 77341. Her telephone number is (409) 294-1212.

Finally, I would like to thank you for sharing your comments with me regarding the past **Monograph Series**. As always, I am eager to hear your criticism, comments, and suggestions relative to this publication. I do hope that you, as loyal members of this National Honorary, check your college university libraries and make sure that they receive ***The Health Education Monograph Series***. If not, please request that they subscribe to these important publications. It is a privilege for me to serve **ESG** members and our profession.

I look forward to hearing from you.

Mohammad R. Torabi, PhD, MPH, CHES
Editor, ***The Health Education Monograph Series***
Indiana University

The Health Education Monograph Series

Volume 14, Number 2 1996

The Health Education Monograph Series

Volume 14, Number 2 1996

An Exploration of Problem-Behavior Theory

Casey Ann Reeves

Abstract

Problem-Behavior Theory explores the contributing factors to problem behaviors, particularly alcohol abuse, through the use of three categories of variables: antecedent-background variables, social-psychological variables, and social behavior variables. Problem-behavior theory is an extremely complex theory that describes the relationship between three variable sets that affect deviant behavior. This paper describes the theory, its development, and applications in health education programming.

Introduction

In American society today, it seems that the population is constantly engaging in behaviors that are detrimental to health and well-being. Drug and alcohol abuse, promiscuous sexual activity, crime, and violence all dominate our society despite the numerous prevention and intervention programs available. New strategies must be implemented if these detrimental behaviors are to decrease. Problem-Behavior Theory is a framework for strategies that could prove effective in this situation. This theory encompasses a wide variety of variables affecting the individual which contribute to these delinquent or problem behaviors. It also focuses on delaying the onset of these behaviors as well as minimizing involvement in them.

Background

Problem behaviors are those which are unaccepted by society and are not appropriate for the age group. They can be performed in opposition to current societal norms and may serve as coping mechanisms, expressions of individualism, or as transition markers (Jessor, 1987). Problem-Behavior Theory is a social, psychological framework designed to account for these problem behaviors as well as customary behaviors. It attempts to explain the highly complex interaction between variables that affect deviant behavior.

This theory is an interactionist, value-expectancy theory developed by Jessor, Graves, Hanson, and Jessor (1968). The constructs of Problem-Behavior Theory were originally developed from the basic concepts of value and expectation in Rotter's Social Learning Theory and from Merton's concept of anomie. It was first used in a comprehensive study of alcohol abuse and other problem behaviors in a small, tri-ethnic community in southwestern Colorado (Jessor, Donovan, & Costa, 1991). This comprehensive theory has since been used to provide an outline for an integrated understanding of problem drinking in all ages, to predict the likelihood of transition behavior, and to explain many other problem behaviors (Jessor et al., 1991).

Problem-Behavior Theory, as shown in **Figure 1**, explains problem behavior as an interaction between three classifications of variables and elements within each variable. All variables and elements within each variable exert considerable influence on one another, but none alone predicts problem behavior. The first class of variables is referred to as the Antecedent-Background variable set. Two elements compose the Antecedent-Background variable set. The **Demographic-Social Structure** includes *family structure* and the *parental backgrounds* such as education, occupation, and religious preference. **Socialization** of the subject resulting from *parental ideology*, *home climate*, *peer influence*, and *media influence* comprises the second element.

The second group is referred to as the Social-Psychological variable set. The main elements within these sets are the **Personality System** and the **Perceived Environment System**. The **Personality System** consists of the *motivational-instigation structure*, the *personal belief structure* and the *personal control structure*. The *motivational-instigation structure* relates to the expectancies placed on realistic goals and the expectations of achieving these goals; these two properties determine if behavior is goal-directed (Plotnick, 1992). Value on academic achievement, independence, and affection are included in this structure. The second component of the **Personality System**, the *personal belief structure*, consists of ones' beliefs about self and how, in relation to society, these beliefs will affect the willingness to participate in nonconforming behavior. Self-esteem and locus of control are also part of this component (Plotnick, 1992). Finally, the *personal control structure* completes the **Personality System.** This structure is similar to the *personal belief structure* in that it provides controls on problem behavior, yet it does so in a more direct format which utilizes personal characteristics that reflect moral standards to determine behavior (Jessor, 1987). Religiosity is also one of these characteristics.

The other system within the Social-Psychological variable set is the **Perceived Environment System.** This is composed of experiential aspects from the environment which reflect the significance of socially organized environmental dimensions (Jessor et al., 1991). The **Perceived Environment System** is divided into two structures, *proximal* and *distal*, which are directly or less directly related to problem behaviors (Perry &

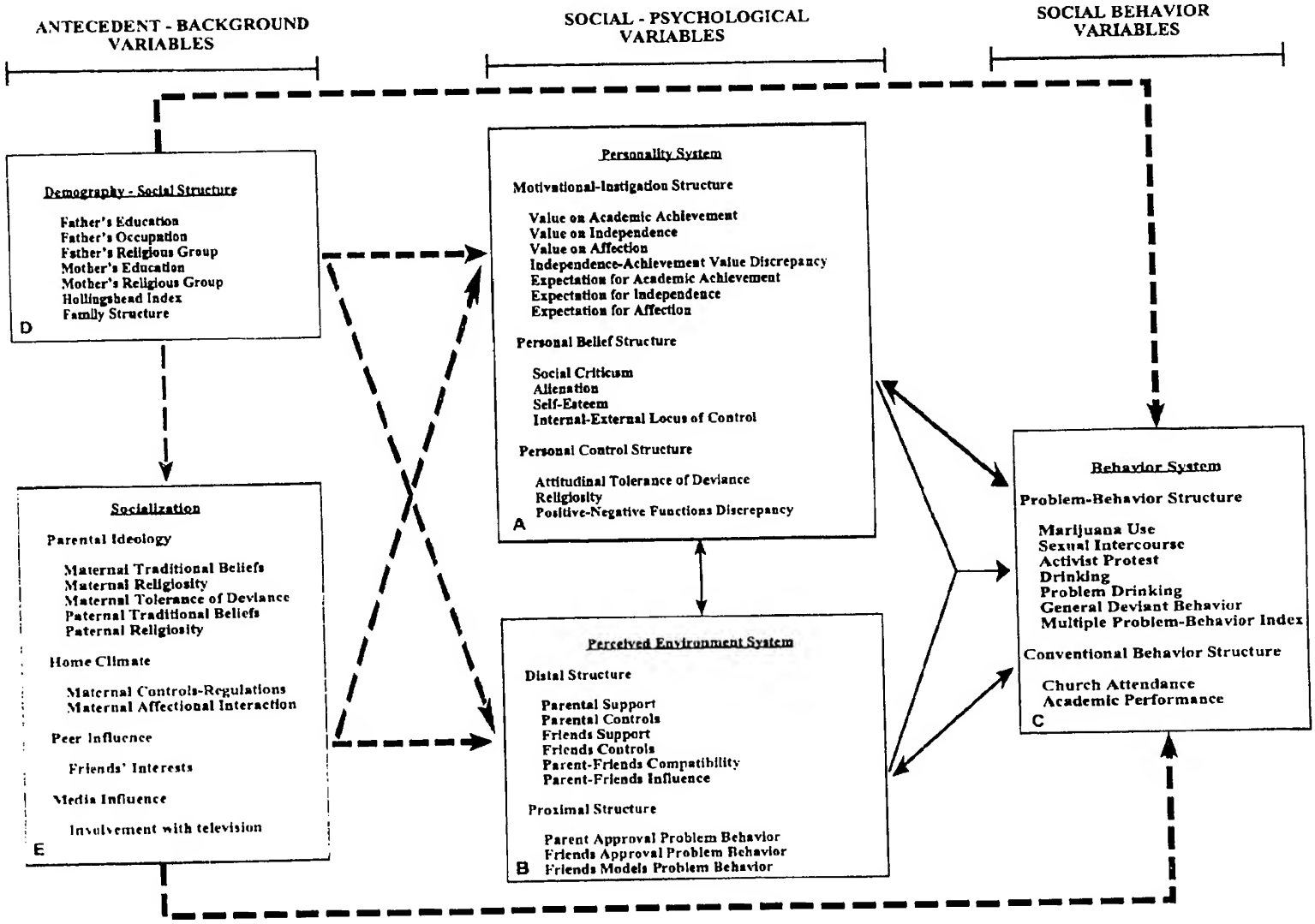


Figure 1

The Conceptual Structure of Problem-Behavior Theory

Murray, 1985). The *proximal structures* are parental and peer approval of problem behavior and peer models of problem behavior. Parental and peer support, controls, compatibility, and influence all compose the *distal structure*.

The last class of variables is the Social Behavior Variable set. The only element in this set is the **Behavior System**. This system serves to display the degree to which interest in the realm of problem behavior has been both comprehensive and differentiated (Jessor, 1987). This system is divided into two structures. The *problem-behavior* or *unconventional behavior structure* consists of six behaviors: marijuana use, sexual intercourse, activist protest, drinking, problem drinking, general-deviant behavior, and the multiple problem-behavior index. The other component, the *conventional behavior structure*, includes only two behaviors: church attendance and academic performance.

Problem-Behavior Theory primarily focuses on the interaction between the last two variable sets, particularly within the **personality** and **perceived environment systems** of the Social-Psychological variable set. These variables are seen as more direct predictors of behavior than is the Antecedent-Background variable set, which plays only a minor role (Hays, Stacy, & DiMatteo, 1987). Problem behaviors result from the interaction of the structures within each system which either instigate problem behavior or control against it (Jessor, 1987). Jessor stated, "These structures together generate a resultant, a dynamic state called proneness, that specifies the likelihood of occurrence of normative transgression or problem behavior" (p. 332). This proneness refers to the variation of structures from all three systems which reflect the underlying dimension of conventionality-unconventionality of each behavior (Donovan, Jessor, & Costa, 1991).

Conventionality-unconventionality stems from an orientation toward, involvement with, or commitment to the standards of behavior and values established by the institutions of American society (Costa, Jessor, & Donovan, 1989). Conventional behaviors include those which are approved and accepted socially and normatively as appropriate for the age group such as church attendance and involvement in school activities for youth and adolescents (Donovan et al., 1991). Unconventional behaviors in contrast are problem behaviors including underage drinking, drug use, and precocious sexual activity. Donovan & Jessor (1985) found that, "the likelihood of engaging in several at-risk or problem behaviors was intercorrelated by a single common trait described as unconventionality which reflects a lack of willingness to conform to conventional social values" (p. 896). Through subsequent research efforts, this common factor of unconventionality has developed into a syndrome of problem behavior. The knowledge of this syndrome has been beneficial in the development of programming for health education.

Evolution of Problem-Behavior Theory

Since its development to study the tri-ethnic community in Colorado, Problem-Behavior Theory has been revised, elaborated, and expanded over the past thirty years to create a working framework for understanding a particular domain of human behavior: behavior that involves moving across personal and societal norms (Jessor et al., 1991). Some critics say that Problem-Behavior Theory is a theory of the middle range: a special theory which is applicable only to limited ranges of data (Jessor et al., 1991). However, this criticism is not valid, noting that it has been applied to several populations in various contexts where it has served to display an extensive array of problem behaviors engaged in by many different age groups (Jessor et al., 1991).

The original framework of Problem-Behavior Theory was revised to accommodate a major, longitudinal study of problem behavior and psychosocial development in junior high school adolescents and college youth (Jessor et al., 1991). This revision also provided the theoretical support for two large scale, national surveys of junior and senior high school youth which focused specifically on alcohol and drug use. A sociocultural model of alcohol abuse was then created which viewed drinking behavior as part of the "rites of passage" from youth into adulthood (Wisniewski, Glenwick, & Graham, 1985). From this sociocultural framework, problem drinking is located in a structure of problem behaviors within a larger system of behavior, the system of the individual's social network and peer group.

The next step in the revisional development of this theory was to test if the concepts and theoretical structure of Problem-Behavior Theory held their explanatory relevance in young adults as they did in adolescents and youth. This was done recently when the theory was again amended and extended to guide the follow-up study of the earlier longitudinal surveys of adolescents and youth as they moved into young adulthood (Jessor et al., 1991). An important concern with this revision was to determine whether maturity and change from adolescence youth into young adulthood involved an increase or decrease in problem-behavior proneness (Jessor et al., 1991).

Another advancement in the study of young adults was made as the research perspective shifted to study the social environment. This was done to investigate the important contexts of young adult life such as family, work, and friends while measuring several key properties of those contexts, including the stresses and satisfactions that were expected to be produced (Jessor et al., 1991). When used in this manner, Problem-Behavior Theory provides a theory-derived description of development which can perform a predictive role when applied to the young adult. It has the possibility of specializing a state or "readiness" for change and the capability of defining the life stage of young adults as different from the life stage of adolescents (Jessor et al., 1991).

A progression of a different type was made when Donovan and Jessor (1985) reanalyzed the data from the studies of junior high school adolescents and college youth with three objectives to reconfirm the accuracy of their theory. First, they retested the hypothesis that the various problem behaviors re-

fleet a single underlying common factor. They found that this did remain true, which offered compelling evidence for the idea of a syndrome of problem behavior (Donovan & Jessor, 1985). Second, they wanted to ascertain the generality of the factor-analytic results across adolescent samples. The sample from the first study was largely middle-class Anglo; in the second study however, they used a more heterogeneous sample. The results from the second analysis showed that the single-factor model is not restricted to only Anglo middle-class adolescents, but has generality for adolescents of many different socioeconomic and ethnic backgrounds from across the nation. Lastly, they wanted to research whether the syndrome observation had developmental generality and whether it could be confirmed in the data from the young adult studies. The outcomes generated showed that there is a syndrome of problem behavior in young adults.

Finally, the theory has been elaborated the most for the recent research involving the extended domain of health-compromising and health-enhancing behavior in youth (Jessor et al., 1991). This extension has been predicted on several occasions, stemming from the overlap between the domains of problem-behavior and health-compromising behavior, and also from the designation of health risk behaviors as departures from informal social norms (Costa et al., 1989).

A new model developed by Gonzalez (1989) to reduce the incidence of drug-taking behavior has also extended the developmental realm of this theory. Gonzalez felt that Perry and Jessor (1983) underemphasized the importance of the variations and interrelationships among behaviors and instead directed their focus of drug abuse prevention research to the importance of addressing multiple domains. The interpersonal domain, which is composed of thoughts, feelings, and motivations for health-related behaviors, is an important determinant in the selection of such behaviors, but environmental factors are also relevant in this aspect. The proposed Gonzalez model uses two types of environmental approaches which could prove useful in reducing drug-taking behavior: (a) environmental factors focused on withstanding health-compromising behaviors (e.g., reducing availability of the drug, media campaigns to resist drug use, sanctions for drug-related activities), and (b) environmental supports for health-promoting behaviors (e.g., positive peer relations, drug-free activities for students, health fitness programs). Hopefully, using these approaches would encourage subjective assessments of personal susceptibility and foster the adoption of alternative behaviors.

Past Applications

Through its evolution, Problem-Behavior Theory has been adapted to a variety of social contexts, age groups, health problems, historical periods, and health-related behaviors (Jessor et al. 1991). Problem-Behavior Theory has also been employed in a wide variety of studies, both cross-sectional and longitudinal, in which it has consistently shown itself to be at least moderately useful (Jessor, Donovan & Costa, 1990).

Problem-Behavior Theory, with its assessment of variables relating to psychosocial and behavioral conventionality-unconventionality, has been shown to account for between 30 and 50 percent of the variance in measures of these different problem behaviors and conventional behaviors in national as well as local samples of adolescents (Donovan et al., 1991). There are specific applications to adolescents within each system of Problem-Behavior Theory. An important example of one in the Personality System is that the value on health is consistently and significantly associated with problem-behaviors, which reflects a greater level of conventionality (Costa et al., 1989). Costa et al. (1989) noted that adolescents who place a higher value on health also value academic achievement more highly, place less value on independence relative to academic achievement, have higher expectations for academic achievement, are more intolerant of deviance, and are characterized by greater religiosity, compared with those who value health less. An exception to this pattern is that higher value on health is linked to higher value on and expectations for independence in the junior high sample. Also of importance in the Perceived Environment System is that adolescents who value health more highly perceive significantly greater compatibility between their friends and their parents, with a greater influence coming from their parents relative to their friends (Costa et al., 1989). In addition, research has shown that there is significant covariation among problem behaviors, and that they tend to be positively interrelated among themselves while related negatively to conventional behaviors (Jessor et al., 1990).

This theory has also been used in several seminal studies by R. Jessor and S.L. Jessor (1977) including research in the initiation of sexual intercourse and the onset of marijuana use. In studying the initiation of sexual intercourse, a significant longitudinal study investigated the transition to non-virginity in two samples of youth, one in high school and the other in college (Jessor, Costa, Jessor, & Donovan, 1983). They found that there is a characteristic pattern involving personality, society, and behavior which seems to be associated with virgin nonvirgin status in a theoretically predicted manner (Jessor & Jessor, 1975). The study found virgins to have higher internal control, to be intolerant of deviance, to have stricter morals, and to have a greater parental influence than peer influence (Jessor et al., 1983). The results in relation to nonvirgins found them to be less conventional in their values and outlook, to value independence more, and to have a less controlling parent and peer influence which provided more support for transition behavior (Jessor & Jessor 1975). From these results, four conclusions about the onset of sexual intercourse can be made. The study showed that many initiate sexual intercourse as a form of coping and that those in the earlier onset groups had a greater proneness for transition making behavior (Jessor et al., 1983). Thirdly, there is no evidence that the time of onset has any relation to the nature of future sexual behavior and, lastly, marijuana and alcohol were significant determinants in the virgin nonvirgin status (Jessor & Jessor, 1975).

Jessor (1976) also researched the social-psychological com-

monalties between marijuana use and other behaviors. He found that marijuana use was considered functional and adaptive and that certain variables were shown to be predictive over time of the onset of use among previous nonusers. In this study, personality and environmental factors were found to play a significant role in the variation of marijuana use.

Criticisms

There have been some criticisms of Problem-Behavior Theory. One criticism states that Problem-Behavior Theory does not have enough focus on the processes of social learning. It should be noted, however, that it does sufficiently specify products of social learning, but does not provide very much detail about the antecedents of these products (Hays, 1985). Another criticism is that Problem-Behavior Theory may be culturally specific and relevant only for adolescents from the U.S. and similar other cultures. A study was done by Grube and Morgan (1990) to test this criticism. They researched drug use in Ireland and found that this was, in some respects, a valid criticism. Among Irish adolescents, drug use is relatively independent of an overall tendency towards deviance. This suggests that some components of the general deviance hypothesis may lack universality and may be culturally bound. However, in other research it can be observed that relationships between the many postulated factors and problem behaviors hold rather well across ethnic groups and geographic regions (Perry & Murray, 1985).

Applications for the Future

To suggest future applications of Problem-Behavior Theory, one must first examine its historical uses. It has, in the past, primarily been used to examine and explain alcohol and other drug use. It has also been used to examine sexual behaviors and smoking. Future uses of this theory will build on knowledge of deviant behavior gained from these studies, focusing on behaviors that share common characteristics with the aforementioned behaviors.

The theory in its present state may not be as useful in explaining other behaviors that may threaten life and health of the individual, for example, inappropriate dietary choices, lack of exercise, unsafe behaviors, and so forth. While there exists a large menu of behaviors that increase the individual's risk of premature morbidity, many of these cannot be defined as "problem behaviors" or "deviant."

The great number of studies that have been done using Problem-Behavior Theory have led to many conclusions which can be used in future health education programming. The care that was put into designing this theory by specifying variables and positing relationships between them has been very beneficial to the prevention researcher (Perry & Murray, 1985). There has been success in concentrating on the social environment and functionality rather than only on dysfunctional personality states. It is also beneficial to prevention researchers that this theory has established the concept of a behavioral syndrome that is predictable and sustained over time, while focusing on a developmental approach that examines multiple behaviors. In this respect, researchers have been able to focus their programs on the functions of problem behavior and preventing problem behavior by delaying the onset of the behaviors, rather than focusing solely on behavior abstinence. In general, prevention programs should be developed to expand their ideas beyond the traditional focus on the individual and isolated problem behaviors and include more general programming focusing on the behavioral syndrome theory (Donovan & Jessor, 1985).

A specific example can be seen by looking at a program focusing on reasons that college students drink. One reason is that drug use is often perceived by young people as a form of fun. The two influences which play the most important roles in explaining problem drinking are peer models of problem behavior and the functions of drinking (Lo, 1991). Researchers have found that the more reasons an individual perceives for drinking, the more likely he or she is to become dependent on alcohol or have subsequent problems (Lo, 1991; Colwell, Billingham, & Gross, 1995). For this reason, problem drinking prevention programs should include starting at an early age to identify those with a greater likelihood for problem drinking and exploring the functions of drinking (Lo, 1991). Peer models could also be used in programs which target students as a whole and attempt to define moderate drinking norms as opposed to heavy drinking or abstinence (Lo, 1991).

Another study relating to problem drinking used the Health Belief Model, Social Learning Theory, and Problem-Behavior Theory and developed a prevention program based on the ideas that substance abusive behaviors can be seen as health-enhancing or health-compromising (Gonzalez, 1989). Some ideas for intervention created in this study include developing opportunities for alternative health-enhancing behavior and using role models who exhibit health-enhancing behavior (Gonzalez, 1989).

Conclusion

Although Problem-Behavior Theory was developed to study alcohol abuse, it has evolved into a multi-use theory which has been successfully applied to many problems, populations, and age groups. With different problem behaviors developing every day, the usefulness of this theory can only increase. In the future, our society would benefit not only from increased use of this theory, but also from research which would focus on clarifying the social and cultural conditions under which Problem-Behavior Theory holds true. Problem-Behavior Theory may also be used in the future to develop sound theoretical interventions. Such applications might be directed at modifying personality or environment, rather than focusing solely on an established problem behavior (Gerber & Newman, 1989). With its basis in Social Learning Theory (Rotter, 1982), Problem-Behavior Theory has potential for use

in situations where external influences of behavior appear to be useful. Nevertheless, it must be recognized that one of the primary barriers to use of this theory is its complexity. It consists of three separate and complex variable sets, each of which consists of multiple elements which are difficult to define and measure. Mastery of this theory, and its use in programming, has potential to significantly improve health promotion activities.

References

Colwell, B., Billingham, R., & Gross, W. (1995). Reasons for drinking: Cognitive processes and alcohol consumption. *Health Values: The Journal of Health Behavior, Education, & Promotion, 19*, 30-38.

Costa, F.M., Jessor, R., & Donovan, J.E. (1989). Value on health and adolescent conventionality: A construct validation of a new measure in Problem-Behavior Theory. *Journal of Applied Social Psychology, 19*, 841-861.

Donovan, J.E., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. *Journal of Consulting and Clinical Psychology, 53*, 890-904.

Donovan, J.E., Jessor, R., & Costa, F.M. (1991). Adolescent health behavior and conventionality-unconventionality: An extension of Problem-Behavior Therapy. *Health Psychology, 10*, 52-61.

Gerber, R.W., & Newman, I.M. (1989). Predicting future smoking of adolescent experimental smokers. *Journal of Youth and Adolescence, 18*, 191-201.

Gonzalez, G.M. (1989). An integrated theoretical model for alcohol and other drug abuse prevention on the college campus. *Journal of College Student Development, 30*, 492-503.

Grube, J.W., & Morgan, M. (1990). The structure of problem behaviors among Irish adolescents. *British Journal of Addictions, 85*, 667-675.

Hays, R. (1985). An integrated value-expectancy theory of alcohol and other drug use. *British Journal of Addiction, 80*, 379-384.

Hays, R.D., Stacy, A.W., & DiMatteo, M.R. (1987). Problem-Behavior Theory and adolescent alcohol use. *Addictive Behaviors, 12*, 189-193.

Jessor, R. (1976). Predicting the onset of marijuana use: A developmental study of high school youth. *Journal of Consulting and Clinical Psychology, 44*, 125-134.

Jessor, R. (1987). Problem-Behavior Theory, psychosocial development, and adolescent problem drinking. *British Journal of Addiction, 82*, 331-342.

Jessor, R., Costa, F., Jessor, L., & Donovan, J.E. (1983). Time of first intercourse: A prospective study. *Journal of Personality and Social Psychology, 44*, 608-626.

Jessor, R., Donovan, J.E., & Costa, F. (1990). Personality, perceived life chances, and adolescent health behavior. In K. Hurrelmann & F. Losel (Eds.), *Health hazards in adolescence* (pp. 25-41). Berlin: Walter de Gruyter & Co.

Jessor, R., Donovan, J.E., & Costa, F.M. (1991). *Beyond adolescence: Problem behavior and young adult development*. New York, NY: Cambridge University Press.

Jessor, R., Graves, T.D., Hanson, R.C., & Jessor, S.L. (1968). *Society, personality, deviant behavior: A study of a tri-ethnic community*. New York, NY: Holt Rinehart Winston.

Jessor, R., & Jessor, S.L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York, NY: Academic Press.

Jessor, S.L., & Jessor, R. (1975). Transition from virginity to nonvirginity among youth: A social-psychological study over time. *Developmental Psychology, 11*, 473-484.

Lo, C.N. (1991). Psychosocial correlates of problem drinking behavior and multiple drug-using behavior among collegians. *College Student Journal, 25*, 141-148.

Perry, C.L., & Jessor, R. (1983). Doing the cube: Preventing drug abuse through adolescent health promotion. In T.J. Glynn, C.G. Leukefeld, & J.P. Ludford (Eds.), *Preventing adolescent drug abuse: Intervention strategies* (pp. 51-75). Rockville, MD: National Institutes on Drug Abuse.

Perry, C.L., & Murray, D.M. (1985). The prevention of adolescent drug abuse: Implications from etiological, developmental, behavioral, and environmental models. *Journal of Primary Prevention, 6*, 31-52.

Plotnick, R.D. (1992). The effects of attitudes on teenage premarital pregnancy and its resolution. *American Sociological Review, 57*, 800-811.

Rotter, J.B. (1982). *Social Learning and Clinical Psychology*. New York, NY: Praeger.

Wisniewski, N.M., Glenwick, D.S., & Graham, J.R. (1985). MacAndrew scale and sociodemographic correlates of adolescent alcohol and drug use. *Addictive Behaviors, 10*, 55-67.

HIV/AIDS Prevention, Intervention, and Education Techniques Used Within the American Indian Population

Ursula R. Smith

Abstract

The American Indian disproportionately faces many health issues such as suicide, alcoholism and HIV/AIDS. The purpose of this paper is to provide information regarding HIV/AIDS prevention and intervention techniques used among the American Indian population. If prevention and intervention techniques are currently implemented, are they culturally sensitive? If such techniques are culturally sensitive, are they sensitive to both reservation lifestyle and the lifestyle of the modern world? A review of literature was conducted to compare various HIV/AIDS prevention and intervention techniques currently implemented on American Indian reservations. In reviewing related literature, it was noted that death rates in the U.S. have declined. However, not all socioeconomic groups have benefited equally from this decline. The poor and poorly educated are still dying at higher rates than those with higher incomes and or better education. HIV/AIDS prevention and intervention techniques used among the American Indian population are both numerous and diverse, however, there is a need for programs that are both culturally sensitive and directed toward the different lifestyles the American Indian may adopt.

Introduction

Since the beginning of the acquired immunodeficiency syndrome (AIDS) epidemic, ethnic minority populations in the United States have been disproportionately affected by the human immunodeficiency virus (HIV). One such ethnic minority group is the American Indian. Surveillance records from the Centers for Disease Control and Prevention (CDC) indicate that mode of transmission for HIV and demographic distribution among AIDS sufferers among the American Indian Alaska Native population differ from the non-Indian population. American Indian AIDS sufferers are 85% male and 15% female. This compares to the sex distribution among white, non-Hispanic population of 93% male and 7% female. This reflects the greater incidence of heterosexual transmission in the American Indian population. Fifty-two percent of American Indian Alaska Native AIDS patients report their primary risk behavior as men having sex with men, while in the white, non-Hispanic population, 71% report male-to-male transmission. Transmission by intravenous drug use in the American Indian population is 19% compared to 10% in the white, non-Hispanic population, and transmission by both men who have sex with men and intravenous drug use is 15% among the American Indian population and 7% among the white, non-Hispanic population (CDC, 1993).

Incidence rates of AIDS among American Indian Alaska Native, as reported to the CDC in the past five years, indicate a significant increase in new cases. Cumulative cases of AIDS as reported to the CDC in 1991 totaled 322, compared to 1,202 total cases reported through June 1995, with the largest percentage increase (83%) between 1992 and 1993. This increase indicates that HIV/AIDS may become a serious health concern among the American Indian population. Furthermore, this increase implies the need for immediate implementation of effective HIV/AIDS prevention, intervention, and education techniques.

The Native American population includes both American Indians and Alaskan Natives. The focus of this paper was HIV/AIDS prevention, intervention, and education techniques used within the American Indian population; therefore, for the purpose of this paper the term American Indian is used.

Demographics

According to Moncher, Holden and Trimble (1990), the Native American population is presently growing and is currently at least as large as the 1980 Census estimate of 1.4 million. Hodgkinson (1992) states that the Native American population is less than one percent of the total U.S. population and represents half of the nation's languages and cultures. Oklahoma has the largest American Indian population, totaling 252,089. Consideration should be given to the fact that the Native American population is young, with a median age of 18 years.

Metler, Conway, and Stehr-Green (1991) compared American Indians and Alaska Natives to the total U.S. population, finding them to be younger, less educated, less likely to be employed, and poorer. Moncher et al. (1990) stated that approximately 45% of the reservation population is below the poverty line. American Indian adolescents (compared to other U.S. ethnic-racial populations), use drugs and alcohol earlier,

more heavily, and with more dire consequences. As Rowell (1990) cited, researchers have found a direct correlation between the use of alcohol and drugs and noncompliance with safer sex guidelines. As Metler et al. (1990) stated, the American Indian and Alaska Native population constitute only a small percentage of the total U.S. population; however, they have higher rates of sexually transmitted diseases, alcoholism, and drug abuse. These factors are consistent with a high risk potential for the transmission of the HIV.

Over the past several decades, death rates in the United States have declined. However, not all socioeconomic groups have benefited equally from this decline. A retrospective study conducted from 1960-1986 indicated that, despite the overall decline in death rates in the United States since 1960, the poor and poorly educated continue to die at higher rates than those with higher incomes and or better education 1960 - 1986. This disparity increased between 1960 and 1986 (Pappas, Queen, Hadden, & Fisher, 1990). Certainly, mortality figures for American Indians, an economically depressed group, reflect this trend.

Hogg et al. (1994) stated that AIDS is a leading cause of premature death and the relation between low socioeconomic status and HIV association mortality is of major concern. Statistics from the CDC indicate that HIV-AIDS has entered the Native American population more rapidly than it has any other race in the United States. If class difference is an important factor in determining the outcome of HIV infection, beneficial prevention, intervention, and education techniques must be implemented now within the American Indian population in order to change the natural history of HIV AIDS.

Substance Abuse

Mancall (1993) states that deaths related to alcoholism remain four times higher for Indians than for the general population. Additionally, in samples of 7th to 12th grade American Indian youth between 1975 and 1987, Moncher et. al. (1990) noted increases in reported lifetime substance use across the majority of substances. A sample of Native American high school seniors in 1986 - 1987 reported the following usage in the past month: 58.5% used alcohol, 36.5% used marijuana, 36.5% used inhalants, 1.8% used cocaine, 3.7% used stimulants. Eighty percent of American Indian reservation adolescents are at least moderately involved with alcohol. Rowell (1990) mentions that many American Indian health educators believe that alcohol plays a serious role in the AIDS epidemic. Alcohol plays an indirect route of HIV transmission by altering an individual's sexual behavior.

HIV AIDS Knowledge, Attitude and Behavior

Current research indicates significant lapses in important areas of HIV AIDS knowledge among American Indian youth and adults. The Northwest Portland Area Indian Health Board (Hall, White, & Bodenroeder, 1990) conducted an HIV AIDS knowledge, attitude, and behavior survey among American Indians from Oregon, Idaho, and Washington. They found that although the sample of 710 American Indians had a good knowledge of the cause of AIDS, it was not well informed about the low risk of transmission of HIV through casual contact. Respondents had a high level of information on explicit issues such as identifying HIV as the virus causing AIDS and that AIDS can be transmitted by sharing needles with an infected person or by sexual intercourse with an infected person. Respondents were unclear about casual contact definitely not putting them at risk for contracting HIV.

The Northwest Portland Area Indian Health Board (Hall, et al., 1990) study also found that among all age groups (younger than 29, 30 - 49, and 50+) respondents were most likely to get information, regarding HIV AIDS from television, and if respondents desired more information they would most likely obtain it from a non-reservation doctor, HMO, or clinic instead of the Indian Health Service. Overwhelmingly, the majority of these respondents had not had an HIV AIDS education class. Lastly, respondents were either not sure or agreed that AIDS had become a major health crisis for American Indians.

According to DePoy and Bolduc (1992), the primary emphasis of AIDS prevention should be behavioral. DePoy and Bolduc conducted research among American Indians residing both on and off reservations in Maine. Their research conclusions generally agreed with the Northwest Portland Area Indian Health Board's (1990) findings, suggesting that respondents were adequately knowledgeable about HIV AIDS transmission and symptoms. Nevertheless, their research revealed misconceptions about person-to-person transmission and blood and body fluid exchange. A high percentage of the respondents believed that HIV can be spread via other body fluids besides blood and by other nonimplicated means, such as direct body contact or by an insect and or an animal. It was believed that areas of misconception may be linked not to each individual's opinion, but to culturally specific and socially accepted beliefs held by the participant's tribe. Additionally, a large percentage of respondents did not positively view the use of condoms as a reliable means of protection, nor did they see a compelling reason to use them. Risk behavior of non-condom use is of great concern.

Since HIV AIDS knowledge was high among the respondents, DePoy and Bolduc recommended specific areas of prevention education: (1) factual information about HIV transmission, (2) risk associated with contact between specific genders, and (3) sexual prevention strategies with special attention given to women's issues and gender norms.

American Indian HIV AIDS Prevention, Intervention, and Education Techniques

Educational prevention measures surrounding the three areas suggested by DePoy and Bolduc have been accomplished through a number of inventive intervention programs developed by the Native American community. It is important to

note that the manner in which programs are received and the extent to which they are successful depends in large measure on their being planned and implemented locally, by American Indian tribal educators for their specific people.

To encourage more women to use condoms, condom jewelry was created by one American Indian group. The jewelry incorporated the traditional American Indian design and was distributed throughout the community. Respected elders in the community have been recruited to discuss safe sex with American Indian youth. In order to address other areas of knowledge, attitude and beliefs about HIV and persons with AIDS, a theater troupe was commissioned to stage a series of plays in which group discussion was facilitated by a respected member of the community following the performance. The last two measures keep with traditional American Indian oral storytelling.

Several American Indian and Native American projects have been developed concerning HIV AIDS and issues surrounding HIV AIDS. Upon request, the Albuquerque Area Indian Health Board provides prevention, education, and outreach to individuals and providers.

Types of prevention and intervention techniques used among the American Indian population are diverse. One technique directed toward adults living on a reservation is an AIDS Bingo Game. This education awareness program was developed by the Manitoba Aboriginal AIDS Task Force. The AIDS Bingo Game uses basic fact statements explaining HIV AIDS and the antibody test, promotes condom usage, and encourages parental guidance, compassion and understanding in dealing with individuals living with HIV AIDS.

Prevention education by the Navajo AIDS Network emphasizes traditional and nontraditional sex education. The Navajo AIDS Network uses Navajo terms to make the topic less offensive. By using Navajo terms, the Navajo AIDS Network has seen more acceptance among the older Navajos of individuals who are HIV positive or diagnosed with AIDS. Additionally, the Navajo AIDS Network has focused its attention on the Navajo children by developing HIV prevention guides with the use of cartoons.

In 1988, An HIV counselor at the Seminole Nation of Oklahoma began implementing an HIV AIDS intervention technique that provides the same information on HIV AIDS to individuals despite their status as intravenous drug users, alcoholics, or users of other licit or illicit drugs. Additionally, the HIV counselor works with tribal employees, community groups and youth groups to get HIV AIDS disseminate information

In the second year of their AIDS Prevention Program, one of the Pascua Yaqui tribe's AIDS educators began publishing a monthly HIV newsletter. The AIDS educator has also provided outreach to American Indian youth through the free school on the reservation. Also, other Pascua Yaqui tribal AIDS educators provide presentations on HIV, conduct outreach on streets, and hand out condoms. Additionally, these AIDS counselors educators provide in-home counseling services. In-home service is important because the American Indian population are largely private individuals (Rush, 1990).

As Rush reported one substance abuse counselor as stating that substance abuse workers can play an important role in HIV education and prevention, not just by education alone but by counseling clients regarding their feelings (1990). The counselor has an understanding of the individual and the community and the interaction between the two. These factors enable the counselor to address HIV at a more personal and cultural level.

Bellymute (1991), an American Indian health educator, works for the Oklahoma Indian Clinic. As the health educator at the clinic she is responsible for conducting a one time AIDS education session to each prenatal patients, patients who are being screened for STDs, and other individuals upon request. Additionally, the health educator travels throughout the American Indian population and provides AIDS education at pow wows and conducts HIV AIDS workshops to the American Indian population nationally.

Rush (1990) also mentioned that Friendship House located in San Francisco, California, began HIV education in 1988. Friendship House's HIV education program is a five-week course which begins anew every fifth week. Classes are conducted for an hour and a half. The first week of the course covers general AIDS information. The second week focuses on sexuality and the importance of communication. The third week focuses on sexually transmitted disease, responsibility, and the role of alcohol and other drugs that alter sexual decision making. A video presentation is provided during the fourth week of the program. The last week of the program is devoted to open discussion. Topics that are usually discussed during the fifth week include relationships and sexual behavior.

Rush (1990) also reported that a community health representative coordinator for the Hoopa Health Association located in Northern California began conducting outreach one-on-one among the community (1990). This same coordinator also established the AIDS Task Force through which condoms are distributed and HIV education is taught in schools. Additionally, the Hoopa coordinator focuses efforts towards incorporating American Indian culture into AIDS outreach. One activity implemented was a traditional salmon feed in which participants were treated to a free meal of traditional fry bread, salad and fish. After the meal, the task force presented HIV AIDS information. According to the task force, this program was well received by the Hoopa community.

Conclusion

Pike (1990) stated that although American Indians can recite the facts concerning HIV AIDS, as other ethnic groups they do not necessarily change their behavior. The general assumption held by researchers, counselors, and educators is that if people were educated, they would change their behavior and take precautions. Educators further believe that for behavior change to be most effective, behavior changes must be immediate and tangible From a student's perspective, the educator must be trustworthy and know what they are talking about.

These HIV AIDS prevention, intervention, and education techniques appear to be culturally sensitive and, as such, are widely impacting their communities in a positive way. However, there is further need for these programs to be implemented and taught by American Indian health educators. Health educators of American Indian descent would be better able to educate by using American Indian cultural traditions and customs. By educating this way, the audience may be more empathetic and therefore connect culturally to HIV AIDS. Additionally, with the high rate of alcoholism and the increase in STDs among American Indians in all age groups, HIV AIDS prevention, intervention, and education techniques could be implemented in conjunction with alcohol education programs.

There is increased need for prevention, intervention and education techniques that are both culturally sensitive and directed toward the different lifestyles the American Indian may encounter. Culturally sensitive implies programming that is planned by and for specific tribal groups, not blanket programs presumed to meet the needs of the extremely diverse American Indian population. There is an additional need for these programs to focus on sub-groups of the American Indian population such as women and adolescents teenagers. Furthermore, prevention, intervention, and education techniques need to emphasize the fact that HIV AIDS is a major health issue facing the American Indian population both on and off the reservation.

References

Bellymute, G. (1991). Fighting HIV disease in Oklahoma's Indian community. *Seasons*, *5*, 1-6.

Centers for Disease Control. (1993). AIDS among racial ethnic minorities-U.S. 1993. *The Journal of the American Medical Association*, *272*, 1163-1164.

DePoy, E., & Bolduc, C. (1992). AIDS prevention in a rural Native American population: An empirical approach to program development. In J. Morales & M. Bok (Eds.), *Multicultural Human Services for AIDS Treatment and Prevention* (51-69). New York, Haworth Press.

Hall, R.I., White, D., & Bodenroeder, P. (1990). A survey of knowledge, attitudes, and behaviors related to AIDS among Native Americans of Oregon, Idaho, and Washington. *Northwest Portland Area Indian Health Board*, 1-29.

Hodgkinson, H. (1992). The current condition of Native Americans. *Clearinghouse on Rural Education and Small Schools* (EDO-RC-92-7).

Hogg, R.S., Strathdee, S.A., Craib, K.J.B., O'Shaughnessy, M.V., Montaner, J.S.G., & Schechter, M.T. (1994). Lower socioeconomic status and shorter survival following HIV infection. *The Lancet*, *344*, 1120-1124.

Mancall, P.C. (1993). "The bewitching tyranny of custom": the social costs of Indian drinking in colonial America. *American Indian Culture and Research Journal*, *17*, 15-42.

Metler, R., Conway, G.A., & Stehr-Green, J. (1991). AIDS surveillance among American Indian and Alaska Native. *American Journal of Public Health*, *81*, 1469-1471.

Moncher, M.S., Holden, G.W., & Trimble, J.E. (1990). Substance abuse among Native American youth. *Journal of Consulting and Clinical Psychology*, *58*, 408-415.

Pappas, G., Queen, S., Hadden, W., & Fisher, G. (1993). The increasing disparity in mortality between socioeconomic groups in the United States, 1960-1986. *The New England Journal of Medicine*, *329*, 103-109.

Pike, I. (1990). Education for behavior change. *Seasons*, *1*, 1-3.

Rowell, R. (1990). Alcohol and AIDS. *Seasons*, *2*, 1-2.

Rush, A.G. (1990). Substance abuse and HIV in Native communities: How substance abuse programs are addressing HIV. *Seasons*, *3*, 1-4.

Parent-to-Child Conflict Tactics in Late Adolescence

James Thomas Broadbear

Abstract

Violence between family members represents one of the most troubling social problems and vexing research issues. The Conflict Tactics Scale is an epidemiological tool that assesses reasoning, verbally aggressive, and violent behaviors among intimates. This study describes the frequency of these behaviors, exhibited from parents to children during the last year of high school. The sample included 103 undergraduate students, primarily female, white, and upper-middle class. The subjects reported that their mothers were more likely to utilize the reasoning and verbally aggressive conflict tactics. Both mothers and fathers used the different violence tactics at similar rates although overall mothers are more likely than fathers to have used at least one of the violence tactics one or more times (38% to 24% respectively). The lack of reasoning tactic utilization by fathers and increased use of verbally aggressive tactics by mothers are the most important observations from this study.

Introduction

Violence between intimates has received considerable attention from researchers over the past twenty years. Limitations to accessing data on this most personal form of violent behavior have been overcome with the development of instruments like the Conflict Tactics Scale (Straus, 1979). The Conflict Tactics Scale (CTS) is the most widely used instrument designed to measure the frequency and types of verbal and physical aggression within familial relationships. Violence between spouses was the original target of the CTS but the survey has been used to study conflict resolution tactics in many other relationships including dating (Billingham, 1987; Billingham & Sack, 1987; Caufield & Riggs, 1992; Makepeace, 1981; Riggs, 1993), child-to-parent (Kruttschnitt & Dornfeld, 1992), parent-to-child (Downs, Miller, Testa, & Panek, 1992), and parent-to-teen (Hartz, 1995).

In addition to expanding the populations tested with the CTS, use of the instrument to provide more valid and reliable results has improved as researchers have clarified appropriate applications and statistical analysis. Szinovacz (1983) and Browning and Dutton (1986) provided evidence that using couple data improved CTS results over using victimizer data alone or aggregate husband and wife data. This helped account for an endemic problem associated with CTS domestic violence research, that male victimizers tend to under-report verbal and physical aggression compared to their female victims (Edelson & Brygger, 1986). Greater exploration of the causation, risk factors, etiology, and prevention of aggression within all interpersonal relationship structures is needed. The present study describes parent-to-child conflict tactics in late adolescence.

Late adolescence often produces significant transition in familial relationships. As a person moves from late adolescence to adulthood, significant changes occur in nearly every aspect of his or her life. These changes can produce stress and anxiety between parent and child that can increase verbal and physical aggression when conflict arises (Holmbeck & Hill, 1988). Contrary to conventional wisdom, adolescents are *most* likely to be victims of violent acts committed by parents compared to other age groups throughout childhood. Data from a nationally representative sample in the Second National Incidence and Prevalence Study of Child Abuse and Neglect concluded the estimated incidence rate of physical abuse for the 15-17 age group is 6.33 per 1,000 adolescents (Cappelleri, Eckenrode, & Powers, 1993). This rate is second only to 12-14 age group, whose rate is 6.61 per 1,000 adolescents. Physical abuse in this study was defined as "when a child suffered a physical injury as a result of actions by a parent or caretaker" (Cappelleri et al., p. 1623).

In one survey of college students, 42 and 49 percent reported they had been assaulted by their fathers or mothers, respectively (Randall, 1992). Gelles and Straus (1988) utilized the CTS in the National Family Violence Surveys in 1976 and 1985. Overall violence for children aged 3 to 17 occurred at a rate of 630 per 1,000 in 1976 and 620 per 1,000 in 1985. Severe violence (kicked, bit, or hit with a fist; beat up; threatened with knife or gun; used a knife or gun) occurred at rate of 140 per 1,000 children in 1976 and 107 per 1,000 in 1985. A more expansive definition of violence is used in the CTS (accounting for the wide difference in reported rates between the National Family Violence Survey results and the Second National Incidence and Prevalence Study of Child Abuse and Neglect results) and this research did not subdivide age groups or gender of the children.

Regardless of the specific rate of violence directed at children, it is evident that adolescents are at increased risk for verbal and physical aggression by parents. Further clarification of this phenomenon is needed. The present study describes the frequency of different conflict resolution tactics directed at high school seniors by their mothers and fathers.

Methods

Subjects

A cross-sectional study design was employed to assess the parent-to-child conflict tactics in late adolescence. The total sample consisted of 103 undergraduate students (19 male, 84 female) enrolled in the course entitled "Marriage and Family Interaction" offered by the Department of Applied Health Science at Indiana University. Specific demographic characteristics of the subjects are described in the results section.

Procedure

Students enrolled in the class were informed of the purpose of the study (to assess tactics parents use to resolve conflict with teens) and assured that their participation in the survey was completely voluntary. Students were also informed that individual responses would only be seen by the investigator and all results would be reported in aggregate so no individual responses would be evident. Results provided by study subjects were completely anonymous and confidential.

Questionnaires were distributed to the class and they were allowed as much time during the class period as needed to adequately respond. Subjects handed the completed survey instrument directly to the investigator who placed them in a collection box. A total of 108 students were in attendance and 104 surveys were completed. Of these, 103 were legible and included in the analysis. The survey was conducted at a class session unrelated to violence or parent-child relationships. Although students did study the subject of family violence in this course, at no time did they address it from a personal perspective. The combination of these factors, lack of immediate subject attention and personal assessment, indicated that the results provided should be unbiased.

Instrument

A modified Conflict Tactics Scale was used for data collection (Straus, 1979). Form A of the CTS was used with the addition of items m through r of Form N. This addition provided a more complete portrayal of violent tactics used by parents. The wording of the instrument was altered to reflect the relationship of parent-to-child rather than spouse-to-spouse. One form was completed for the conflict tactics of the mother or primary mother figure and another form was completed for the father or primary father figure.

The CTS includes three subscales. The first subscale is reasoning and includes four items (a through d in Tables 1 and 2). The next scale is verbal aggression and includes six items (e through j in Tables 1 and 2). The final subscale is violence and includes eight items (k through r in tables 1 and 2).

Results

The average age of the subjects was 21.05 and they were distributed by class standing as follows: freshmen=7.8%, sophomores=35.0%, juniors=19.4%, and seniors=34.0%. Subjects reported the income category of their family and the most frequent response was upper-middle (42.7%) followed by middle income (30.1%). Only 2.9% of subjects reported low family income. Ninety-five of the subjects (92.2%) were white and only 2.9% were African-American.

Most of the subjects were currently single (94.1%) but 26.8% considered themselves to be in a committed relationship. During their last year in high school, 69.9% of the subjects' parents were married and 25.2% of parents were divorced. Four subjects (3.9%) reported that one parent was deceased. Subjects were most likely to have been raised by both parents (73.8%), their mother only (14.6%), or by their mother and step-father (6.8%). Members of the sample tended to be the oldest child in the family (38.8%) or the youngest (34.0%) and the majority had 0-1 brothers (77.6%) and 0-1 sisters (69.9%).

The final demographic characteristic measured for the sample was religious involvement. Respondents were most likely to be raised in Protestant denominations (36.9%), Catholic (31.1%), or Jewish (16.5%). Most of the subjects considered religion to be moderately to very important in their lives (65.1%).

The frequency of responses for each individual conflict tactic item was recorded and percentages calculated. Results of the mother-to-teen conflict tactics used during the last year of high school as reported by the subjects are presented in Table 1. Of the reasoning tactics (items a through d) subjects reported that their mothers more frequently tried to discuss an issue calmly or discuss an issue relatively calmly (53.4% and 54.4% used these tactics once a month or more, respectively). Mothers were least likely to bring in someone else to help (50.5% never did this).

Verbal aggression occurred at a high rate, as 85.4% of mothers argued heatedly with their children at least once during the last year in high school. The next most prevalent verbally aggressive conflict tactics used by mothers was yelling or insulting (71% did this at least once) and sulking or refusing to speak about it (48.8% did this at least once). Throwing or smashing something was the least common verbal aggression tactic used as 86.4% of mothers never did this during their child's last year in high school.

Items k through r in Table 1 comprise the violence subscale. The most prevalent form of violence used by mothers was "pushed, grabbed, or shoved you" (21.4% did it at least once). The next most prevalent forms of violence were "slapped you" (15.6% did it at least once), and "hit you with something hard" (6.8% did this at least once). Only one subject reported being kicked, bit or hit with a fist and being beaten up by their mother during the last year in high school.

Results of the father-to-teen conflict tactics as reported by the subjects is presented in Table 2 on page 14. As in the case of mother-to-teen reasoning tactic, fathers more frequently tried to discuss an issue calmly or discuss an issue calmly (89.3%

Table 1

Mother-to-Teen Conflict Tactics

% of respondents who reported that in their last year of high school the tactic happened:

0 never
1 once
2 two or three times
3 often, but less than once month
4 about once a month
5 more than once a month

Conflict Tactic	0	1	2	3	4	5
a. Tried to discuss the issue calmly	4.9	1.9	10.7	26.2	19.4	34.0
b. Discussed an issue relatively calmly	5.8	5.8	11.7	18.4	24.3	30.1
c Got information to back up her side	18.4	8.7	23.3	13.6	12.6	19.4
d. Brought in someone else to help	50.5	10.7	13.6	10.7	3.9	6.8
e. Argued heatedly but short of yelling	14.6	9.7	29.1	24.3	14.6	6.8
f. Yelled and or insulted	28.2	17.5	20.4	14.6	6.8	11.7
g. Sulked and or refused to talk	49.5	18.4	17.5	6.8	2.9	3.9
h. Stomped out of the room	51.5	16.5	17.5	2.9	2.9	6.8
i. Threw or smashed something	86.4	4.9	5.8	1.0	0.0	1.0
j. Threated to hit or throw something	81.6	5.8	4.9	3.9	1.0	1.9
k. Threw something at you	94.2	2.9	1.9	0.0	0.0	0.0
l Pushed, grabbed, or shoved you	76.7	13.6	3.9	0.0	1.0	1.9
m. Hit you with something hard	91.3	2.9	1.9	1.0	0.0	1.0
n. Slapped you	83.5	7.8	5.8	1.0	1.0	0.0
o. Kicked, bit, or hit you with a fist	97.1	1.0	0.0	1.0	0.0	0.0
p. Beat you up	98.1	1.0	0.0	0.0	0.0	0.0
q. Threatened you with a knife or gun	100.0					
r. Used a knife or gun	100.0					

*any item total not equaling 100.0% is due to the lack of responses for the item by some subjects

and 87.3% of fathers used these tactics at least once, respectively. Bringing someone else to help was the least frequent reasoning tactic used by fathers (68.9% never did this). Overall, fathers used the reasoning tactics to a lesser extent than did mothers. Fathers were less frequently verbally aggressive toward their children than mothers. A comparison of fathers and mothers who never used the verbal aggression tactics shows that fathers used all these tactics less often than mothers. The greatest difference was in "sulked and or refused to talk" (68.0% of fathers never did this compared to 48.5% of mothers). The percentage of fathers who never "stomped out of the room" and "yelled and or insulted" was also greatly different (68.9% to 51.5% and 38.8% to 28.2% respectively).

The most prevalent violent tactic used by fathers during the last year in high school was "pushed, grabbed, or shoved you" (13.6% did this at least once). The least prevalent violent tactics used by fathers were "beat you up," "threatened you with a knife or gun," and "used a knife or gun." One subject reported

the occurrence of each of these conflict tactics. It should be noted that the last two of these items did not contribute greatly to the violence subscale in one investigation of the factorial validity of the CTS (Kashani, Dueser, & Reid, 1991). Comparing mother and father violence percentages indicates that fathers were equally violent or less violent than mothers for three of the eight tactics and only marginally different on the rest. The overall results indicate that mothers more frequently used reasoning tactics and verbal aggression tactics when compared to fathers. Both mothers and fathers tended to use violence tactics at a similar rate. For the subjects in this group, 38% experienced one or more violent tactics from their mother and 24% experienced one or more violence tactics from their father during their last year in high school.

Discussion

Late adolescence is a time of significant transition in a

Table 2

Father-to-Teen Conflict Tactics

% of respondents who reported that in their last year of high school the tactic happened:

0 never
1 once
2 two or three times
3 often, but less than once month
4 about once a month
5 more than once a month

Conflict Tactic	0	1	2	3	4	5
a. Tried to discuss the issue calmly	6.8	8.7	17.5	19.4	16.5	27.2
b. Discussed an issue relatively calmly	9.7	10.7	15.4	14.6	18.4	25.2
c. Got information to back up his side	29.1	15.5	14.6	15.5	9.7	9.7
d. Brought in someone else to help	68.9	6.8	8.7	4.9	4.9	1.9
e. Argued heatedly but short of yelling	17.5	15.5	28.2	17.5	5.8	12.6
f. Yelled and or insulted	38.8	6.8	24.3	14.6	1.9	10.7
g. Sulked and or refused to talk	68.0	8	9.7	6.8	1.9	2.9
h. Stomped out of the room	68.9	9.7	8.7	3.9	2.9	2.9
i. Threw or smashed something	87.4	4.9	2.9	1.9	0.0	0.0
j. Threated to hit or throw something	83.5	6.8	3.9	1.0	1.9	0.0
k. Threw something at you	92.2	3.9	0.0	1.0	0.0	0.0
l. Pushed, grabbed, or shoved you	83.5	6.8	4.9	0.0	1.9	0.0
m. Hit you with something hard	91.3	2.9	1.9	0.0	1.0	0.0
n. Slapped you	90.3	4.9	1.0	0.0	1.0	0.0
o. Kicked, bit or hit you with a fist	93.2	1.0	1.0	0.0	1.0	0.0
p. Beat you up	96.1	1.0	0.0	0.0	0.0	0.0
q. Threatened you with a knife or gun	96.1	1.0	0.0	0.0	0.0	0.0
r. Used a knife or gun	96.1	0.0	1.0	0.0	0.0	0.0

*any item total not equaling 100.0% is due to the lack of responses for the item some subjects

person's life. As responsibilities and expectations change the relationship between parent and child can change as well. This study assessed the tactics used by parents to resolve conflict with their children during the child's last year in high school. The Conflict Tactics Scale was used to provide frequency of reasoning, verbal aggression, and violence behaviors. The sample of 103 undergraduate students reported the frequency of the tactics for mothers and fathers separately.

Children experience more violence and abuse by their parents as they get older (Cappelleri et al. 1993). This study attempted to further describe the frequency of this phenomenon for children at the end of late adolescence and assess the differences between mothers and fathers in terms of the conflict tactics. In addition to gaining a better understanding of the frequency of these behaviors, it is important to note the implications of verbal and physical aggression by parents in the lives of young people. There is the obvious potential for physical and emotional harm when a parent is verbally aggressive or violent with a child. Caliso and Milner (1992) have also shown that a personal history of abuse by a parent is a factor in intergenerational transmission of child abuse, although it can be mitigated by other factors such as strong interpersonal relationships in adulthood and less rigid expectations of children.

In a study of the long-term effects of parental violence on women, Downs, Miller, Testa, and Panek (1992) showed that mother-to-daughter verbal aggression and violence was moderately predictive of future involvement in a violent spousal or partner relationship. Father-to-daughter verbal aggression was found to be an important predictor of future alcohol abuse for women in this study. The combination of these factors and other considerations indicate the need to further study the long term impact of verbal and physical aggression on children.

Several limitations of this study are worth noting. The sample was not randomly drawn from all undergraduate students but rather one of convenience, thereby eliminating generalizability of the results. Other researchers have measured additional information that would have shed greater light on verbal and physical aggression directed at high school seniors including mother's age at birth of the child (Connelly & Straus, 1992), injuries that resulted from physical violence (Cantos, Neidig, & O'Leary, 1994), injuries from weapon involvement (Saltzman, Mercy, O'Carroll, Rosenberg, & Rhodes, 1992), and the emotional effect of verbal and physical aggression on adolescents (Holmbeck & Hill, 1988).

Based on results of this study it can be concluded that mothers more frequently used reasoning conflict tactics with their children during the last year of high school than fathers. Mothers were also more frequently verbally aggressive with their children compared to fathers. Both mothers and fathers used the different violence tactics at similar rates although overall mothers more frequently used at least one of the violence tactics one or more times (38% to 24% respectively). It is important to note that the lack of reasoning tactics employed by fathers in resolving conflict with their children has the potential to be harmful to adolescents just as the use of verbal aggression would be damaging. The fact that mothers are more likely to have been verbally aggressive and to have used a violence tactic is the most important observation of this study and worthy of further investigation.

References

Billingham, R.E. (1987). Courtship violence: The patterns of conflict resolution strategies across seven levels of emotional commitment. *Family Relations, 36*,283- 289.

Billingham, R.E., & Sack, A.R. (1987). Conflict tactics and the level of emotional commitment among unmarried. *Human Relations, 40*(1), 59-74.

Browning, J., & Dutton, D. (1986). Assessment of wife assault with the Conflict Tactics Scale: Using couple data to quantify the differential reporting effect. *Journal of Marriage and the Family, 48*, 375-379.

Caliso, J.A., & Milner, J.S. (1992). Childhood history of abuse and child abuse screening. *Child Abuse and Neglect, 16*, 647-659.

Cantos, A.L., Neidig, P.H., & O'Leary, K.D. (1994). Injuries of women and men in a treatment program for domestic violence. *Journal of Family Violence, 9*(2), 113-124.

Cappelleri, J.C., Eckenrode, J., & Powers, J.L. (1993). The epidemiology of child abuse: Findings from the Second National Incidence and Prevalence Study of Child Abuse and Neglect. *American Journal of Public Health, 83*(11), 1622-1624.

Caufield, M.B., & Riggs, D.S. (1992). The assessment of dating aggression: Empirical evaluation of the Conflict Tactics Scale. *Journal of Interpersonal Violence, 7*(4), 549-558.

Connelly, C.D., & Straus, M.A. (1992). Mother's age and risk for physical abuse. *Child Abuse and Neglect, 16*, 709-718.

Downs, W.R., Miller, B.A., Testa, M., & Panek, D. (1992). Long-term effects of parent-to-child violence for women. *Journal of Interpersonal Violence, 7*(3), 365- 382.

Edelson, J.L., & Brygger, M.P. (1986). Gender differences in reporting of battering incidences. *Family Relations, 35*, 377-382.

Gelles, R.J., & Straus, M.A. (1988). *Intimate Violence*. New York: Simon and Schuster.

Hakin-Larson, J., & Hobart, C.J. (1987). Maternal regulation and adolescent autonomy: Mother-daughter resolution of story conflicts. *Journal of Youth and Adolescence, 16*(2), 153-166.

Hartz, D.T. (1995). Comparative conflict resolution patterns among parent-teen dyads of four ethnic groups in Hawaii. *Child Abuse and Neglect, 19*(4), 681-689.

Holmbeck, G.N., & Hill, J.P. (1988) Storm and stress beliefs about adolescence: Prevalence, self-reported antecedents, and effects of an undergraduate course. *Journal of Youth and Adolescence, 17*(4), 285-306.

Kashani, J.H., Deuser, W., & Reid, J.C. (1991). Aggression and anxiety: A new look at an old notion. Journal of the American Academy of Child and Adolescent Psychiatry, *30*(2), 218-223.

Kruttschnitt, C., & Dornfeld, M. (1992). Will they tell? Assessing preadolescents' reports of family violence. *Journal of Research in Crime and Delinquency, 29*(2), 136-147.

Makepeace, J.M. (1981). Courtship violence among college students *Family Relations, 30*, 97-102.

Randall, T. (1992). Adolescents may experience home, school

abuse; their future draws researchers' concern. *Journal of the American Medical Association, 267*(23), 3127-3128, 3131.

Riggs, D.S. (1993) Relationship problems and dating aggression. A potential treatment target. *Journal of Interpersonal Violence, 8*(1), 18-35.

Saltzman, L.E., Mercy, J.A., O'Carroll, P.W., Rosenberg, M.L., & Rhodes, P.H. (1992). Weapon involvement and injury outcomes in family and intimate assaults. *Journal of the American Medical Association, 267*(22), 3043-3047.

Straus, M.A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage and the Family, 41*, 75-88.

Szinovacz, M.E. (1983). Using couple data as a methodological tool: The case of marital violence. *Journal of Marriage and the Family, 45*, 633-644.

Process Evaluation of a Nutrition Based Program for Low-English Proficient Latinos in English-as-a-Second-Language (ESL) Classes

Ofelia Alvarado

Abstract

In English-as-a-Second-Language (ESL) classes, students (n = 90) were taught by ESL teachers (n = 5) a nutrition based cardiovascular disease prevention curriculum consisting of five 3-hour nutrition classes. The purpose of this process evaluation was to understand how teacher implementation factors correlated with changes in student nutrition knowledge, nutrition self-efficacy, and intentions to change dietary habits.

Teacher implementation factors used to assess program effectiveness included variables from (a) teacher training pre- and post-test, (b) general classroom observations, (c) curriculum coverage, and (d) teacher satisfaction survey. Student self-reported nutrition-related pre- and post-test assessed student knowledge acquisition, self-efficacy, and intentions to change outcomes.

Descriptive analyses of teacher-related factors found that the teachers had implemented a considerably high percentage (82.22%) of the curriculum, overall classroom effectiveness was satisfactory, teachers increased in nutrition knowledge after their training, and the teacher satisfaction survey showed general satisfaction. Students had statistically significant changes regarding nutrition knowledge and self-efficacy and only a slight but marginal change in intentions to change dietary habits. However, no significant association was found among teacher-related factors and student changes. Evaluation involved repeated measures analysis of variance and multiple regression.

Introduction

Health programs employ process evaluation to assist in interpreting program development, implementation and outcomes, and to guide future program planning. So important are implementation factors that some have suggested the greatest degree of success of health promotion programs has to do more with the details of their implementation and less to do with their fundamental concepts (Dehar, Casswell, & Duignan, 1993). Although more of these programs are including process evaluations in which implementation data are collected, there is still a lack of attention to implementation issues (Dehar, Casswell, & Duignan, 1993).

Many health promotion researchers and practitioners now believe that an effective program may not always be implemented as intended by program providers. McCormick, Steckler, & McLeroy, 1994 found that when an effective program is not appropriately implemented it is thought to be the basis for some negative evaluation findings. The researchers indicate no matter how effective a given program may be, its impact will be determined by the extent to which it is disseminated and maintained in the classrooms. Therefore, an important aspect of evaluating health programs is to understand how health providers are using health curriculum.

One component of curriculum or program evaluation usually involves determining the number of program lessons, activities, objectives, or components that are delivered and the amount of time spent on each. A second component to evaluate is the quality of program implementation, often referred to as program completeness or accuracy of delivery. Measures of implementation quality assess the extent to which a program was implemented as designed (Rohrbach, Graham, & Hansen, 1993).

At the program provider level, implementation of innovative programs is related to attributes of the innovation as well as the cognitive, social and psychological attributes of the providers themselves (Rohrbach, Graham, & Hansen, 1993). The researchers further state that classroom teachers are more likely to implement educational innovations that are well specified and require the same teaching strategies that they normally use.

Effective program implementation and outcome have been shown to be positively associated with teacher training (Ross, Luepker, Nelson, Saavedra, & Hubbard, 1991). Studies have shown that for curriculum innovations, preimplementation training increases the likelihood that teachers will implement the curriculum fully and accurately (Rohrbach, Graham, & Hansen, 1993). Training also appears to influence teacher's health knowledge, perceptions about the importance of teaching the curriculum, intent to teach and level of comfort with the new curriculum (Smith, McCormick, Steckler, & McLeroy, 1993).

In the present study, we examined teacher factors related to the implementation of a nutrition-based intervention for adult Latinos. The cardiovascular disease prevention program was

tailored to meet the objectives of the class as well as the health education objectives. Besides documenting the quality of implementation, the purpose of the study was to understand how teacher implementation factors are associated with changes in students' nutrition knowledge and nutrition self-efficacy outcomes. Teacher implementation factors included variables from (a) teacher nutrition knowledge measured at pre- and post-training, (b) classroom observation of teachers' general effectiveness, (c) curriculum coverage, and (d) teacher satisfaction with the program and training. Student nutrition knowledge and self-efficacy were measured to provide program outcomes.

Methods

Language For Health

Language for Health (LFH) is a nutrition-based cardiovascular disease prevention program for low literate adult students in the San Diego Community College District (SDCCD) and funded by the National Heart, Lung and Blood Institute (NHLBI). It targets Latino students in English-as-a-Second-Language (ESL) classes and consisted of five 3-hour classes. The objectives of the project were to integrate nutrition and health promotion curricula into the ESL classes and to assess the effectiveness of the education in changing nutrition-related knowledge, attitudes and behaviors. To assess the effectiveness of the LFH program, students were evaluated using self-reported surveys at baseline and at 3 months after intervention.

The objectives of the ESL curriculum typically in use in the SDCCD emphasize English acquisition within the context of developing basic living skills such as understanding foods and packaging, understanding money and money management, using the telephone, following instructions, identifying and using community services, and health and safety issues. The LFH curriculum meets other requirements specific to ESL in that it teaches language acquisition within a functional context and is culturally sensitive. It employs interactive activities with various modes of delivery. In addition, it promotes growth in reading and writing English and is competency-based (i.e., it is learner centered with continual assessment and evaluation).

The main nutrition topics covered in the five modules included: (a) food classification within the food pyramid, (b) fats in food and their relationship to heart disease, (c) foods that increase blood cholesterol and blood pressure, (d) recipe substitution and modification, and (e) how to shop for health and savings. The intervention activities involve four principles:

1. The smallest amount of information necessary to make a point is provided. All material was developed to ensure inclusion of only essential information in the most appropriate sequence.

2. Each point is made as vividly as possible. This is accomplished by presentations specific to the experiences of the students, by the use of appropriate educational technology and audiovisual aids to demonstrate a point, by having students restate the point in their own (English) words and by performing this process frequently during the presentation rather than at the end of a long time segment.

3. The participants restate the information, demonstrate relevant skills, and receive feedback on these demonstrations from the instructors and other participants.

4. Frequent repetition and reviews of current and previous material is incorporated into the intervention.

Participants

Ninety-three Latino adults taking ESL classes in two community colleges in the San Diego area participated in the LFH program being evaluated. The student mean age was 32.37 years with ages ranging between 18 and 63 years. Of the 87 participants who reported their gender, 23 were males and 64 females.

Teacher Factors

Of the teachers (n = 5) implementing the LFH curriculum being evaluated (four females and one male) four teachers had over six years experience teaching ESL classes. The program coordinator from the SDCCD recruited and trained the teachers. Permission was obtained from the teachers for the project staff to have telephone numbers and times to contact them as needed.

Teacher Training

The teachers were asked to preview the LFH curriculum to become familiar with the subject matter before attending a five-hour training session. The training was intended to increase preparedness in implementing the program. Teacher training for the intervention incorporated instruction as it relates to heart disease prevention, the use of goal setting, self-monitoring, modeling, behavioral practice (especially with respect to food purchasing and preparation in nutrition), feedback on behavioral skills and practice, group and individual- based reinforcement, contingency contracting, social support, and maintenance and generalization procedures. The training was conducted by two ESL curriculum writers from the SDCCD who, in cooperation with project staff, also developed the nutrition modules within the guidelines of the NHLBI and the California Model standards for ESL instruction.

Before the start of the training session, the teachers were administered a 14-item nutrition knowledge pre-test and at the end of the training period they were given the post-test. They could receive a possible score of 0-29 on both the pre- and post-test.

Classroom Observations

The teachers who participated in the study agreed to permit LFH staff to observe two curriculum lessons during implemen-

tation. Out of the five modules, one for each day of implementation, modules three and five were observed. Observation of module five was prearranged with the teachers while module three was observed unannounced. Classroom observation criteria were rated using a 19-item five-point Likert scale. *Student understanding and interest in material* were assessed using two items addressing enthusiasm about the material presented and comprehension of lessons. Classroom interaction was measured using six items concerned with students' attentiveness, cooperation, and participation with curriculum activities. *Communication and classroom logistics* were assessed using five items concerned with visual aids, vocabulary, and ability to hear and understand teacher's directions. *Student and teacher interaction* were measured using six items that assessed teacher response to student questions, how students answered teacher's questions, and how classroom digressions were handled. An overall mean of 38 items (19 items for each of the two modules) were computed to represent a measure of teacher's overall effectiveness.

Program Coverage

Observers had a list of topics to be covered by the teachers for each module observed. As the teachers covered a lesson, observers would check *yes* if it was covered or *no* if it was not covered. Module three had 11 lessons to be covered and module five had 8 lessons. A percentage was computed that indicated the degree of program coverage in the two modules.

Teacher Satisfaction with Training and Program

At the end of the intervention implementation, teachers were administered a teacher satisfaction survey. The 16-item questionnaire asked them to rate their own enthusiasm in teaching the course, how well they felt the training prepared them to teach the class, how well the curriculum met the ESL objectives of their class, the teaching aids and the support received from the HEH staff. A mean score from a 5-point Likert scale (5 as the highest rating) was used to compute a satisfaction rating.

Student Factors

Students were administered a pre- and post-test to assess their acquisition of nutrition knowledge, self-efficacy as it related to changing one's diet, and intentions to change one's nutritional habits. Nutrition knowledge was assessed using 27 items. Self-efficacy and intentions were measured using 11 items that assessed future intentions to change their diet, what they believed about health, and the foods they eat.

Results

Teacher Factors

To analyze teacher related factors, simple descriptive analysis and paired t-test were used. Teachers' pre-training nutrition knowledge test average mean score was 18 (62.0%) out of a possible 29 with the lowest score being 15 (51.70%) and the highest 19 (65.5%). Post-test mean score was 21 (72.4%) with the lowest score at 20 (68.9%) and the highest 23 (79.3%). This change was statistically significant (t 3.06, df 4, p .05).

Classroom observations were measured on a 5-point Likert scale, five as the highest possible rating. The mean evaluation score was 4.13 with a range of 4.58-3.37.

Program coverage referred to how much of the curriculum observed was covered by the teachers. Descriptive analysis found a mean score of 82% of materials and topics were covered ranging from a minimum score of 63% and maximum of 93%.

The teacher satisfaction survey scores ranged from a maximum of 4.7 to a minimum of 4.0, with a mean score of 4.2. These scores show the teachers were relatively satisfied.

Student Changes

Table 1 shows changes in student's pre- and post-intervention knowledge, self-efficacy, and intention scores. There was a statistically significant change in pre- and post-intervention knowledge from 5.57 to 8.5, and in pre- and post-intervention self-efficacy from 2.38 to 2.59. Pre- and post-intervention in-

Table 1

Changes in Student Nutrition Knowledge, Self-Efficacy, and Intentions

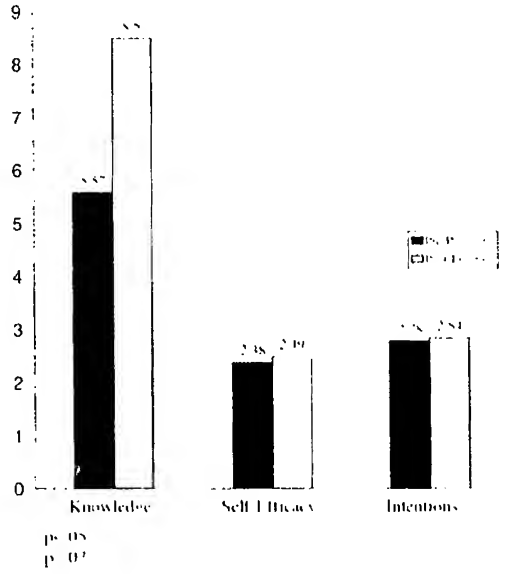


Table 2

Results of Multiple Regression Procedures Relating Teacher Factors to Changes in Student Outcomes

Outcome Predictors	R	R2	R2W	F
Knowledge				
Pre-Knowledge	.03	.09	.09	8.36**
Self-efficacy				
Pre-self-efficacy	.53	.28	.28	2.57
Teacher Satisfaction	.56	.31	.03	19.17***
Intentions				
Pre-intentions	.41	.17	.17	16.92***

** p< .01
*** p< .001

tentions scores showed a significant but marginal change from 2.78 to 2.86.

Teacher Factors Related to Student Outcomes

Table 2 depicts the correlations found among teacher-related factors and student outcome changes. A multiple regression procedure was used to investigate the association between the four teacher factors (i.e., nutrition knowledge, program coverage, classroom observation and satisfaction with program) to each of the three student outcomes (i.e., nutrition knowledge, self-efficacy, and intentions to change). For each student post-test outcome measure, the four teacher factors were entered into the equation, using a stepwise method, and controlling for the student's pre-test score. After controlling for pre-test values, no teacher-related factors were found to be positively related to any of the student changes.

Discussion

Process evaluation is utilized to assess implementation factors and to determine how a program achieves what it does. This approach in evaluating programs contributes valuable information to the different factors related to effective health promotion and disease prevention program outcomes. Although the usefulness of evaluating implementation factors is well recognized in the literature, such procedures are rarely performed. The purpose of the present study, a nutrition-based curriculum for low-English proficient Latinos, was to explore the association among four teacher-related implementation factors and increases in students' nutrition knowledge, self-efficacy, and intentions to change their dietary habits.

Statistical analysis used included simple descriptive statistics, paired t-test, and multiple regression procedures. Descriptive analyses of teacher-related factors found that the teachers had implemented a considerably high percentage (82.22%) of the LFH curriculum topics and objectives as reported by staff observers. Additionally, overall classroom effectiveness was satisfactory. Using t-test analysis, post-test scores of nutrition knowledge indicated an increase in nutrition knowledge among teachers after their training. The final teacher-related factor, teacher satisfaction, showed the teachers were generally satisfied with the training received, the teaching aids, the LFH staff, that they were enthusiastic about teaching the course, and the curriculum met the objectives of the class. These findings were not surprising in that the curriculum was designed to be easily implemented within the context of the class.

Students had statistically significant changes regarding nutrition knowledge and self-efficacy and a significant but marginal change in intentions to change their dietary habits. However, an association among teacher-related factors and student changes was not found in this study.

Some elements that may have attributed to the lack of relationship between teacher-related factors and student outcomes are: (a) the educational strength of the curriculum may have brought about the changes regardless of the teacher related factors being examined (or the qualities teachers possessed), (b) teacher measurements may not have detected critical teacher-related factors, and (c) secular trends in the community may have brought about the changes and not the program per se or what the teachers did or did not do.

Because this was a preliminary study, it is recommended that the results be extended by collecting more data and by increasing the sample size and thereby increasing the statistical power. It is also suggested that teacher-related factors assessing teacher effectiveness include more specific variables regarding teachers' classroom performance. Finally, it is further recommended that more than two classroom observations and more than one observer be included in the measurements to expand the observation data and reduce the bias of having only one observer.

References

Dehar, M., Casswell, S., & Duignan, P. (1993). Formative and process evaluation of health promotion and disease prevention programs. *Evaluation Review, 19* (2), 205-220.

Gingiss, P., Gottlieb, N., & Brink, S. (1994). Measuring cognitive characteristics associated with adoption and implementation of health innovations in schools. *American Journal of Health Promotion, 8* (4), 297-301.

McCormick, L., Steckler, A., & McLeroy, K. (1995). Diffusion of innovations in schools: A study of adoption and implementation of school-based tobacco prevention curricula. *American Journal of Health Promotion, 9* (3), 210-219.

Rohrbach, L., Graham, J., & Hansen, W. (1993). Diffusion of a school-based substance abuse prevention program: Predictors of program implementation. *Preventive Medicine, 22*, 237-260.

Ross, J., Luepker, R., Nelson, G., Saavedra, P., & Hubbard, B. (1991). Teenage Health Teaching Modules: Impact of teacher training on implementation and student outcomes. *Journal of School Health, 61*, (1), 31-18.

Smith, D., McCormick, L., Steckler, A., & McLeroy, K. (1993). Teachers' use of health curricula: Implementation of Growing Healthy, Project SMART, and the Teenage Health Teaching Modules. *Journal of School Health, 63*, (8), 349-354.

Potential Solutions to the Problem of Adolescent Smoking

Susan S. Thomas

Abstract:

Although cigarette smoking has been declining in the general population, a disturbing increase has occurred in rates of tobacco use among school aged populations. Adolescents record smoking rates much higher than rates for the general population. The increase has been attributed to a combination of pressure by peers, the marketing efforts by tobacco companies, and the addictive nature of nicotine. Schools have confronted the problem by teaching students the social skills necessary to resist offers of tobacco. Further research indicates, however, that resistance skills alone are not sufficient in the fight against cigarettes. It has become evident that it is equally important, if not more important, to create an environment which is unfavorable to smoking. Australia's Victorian Tobacco Act provides a model for other communities interested in creating an environment free of tobacco.

Introduction

Cigarette smoking is often cited as the single most preventable cause of death and disability in the United States (U.S. Department of Health and Human Services [USDHHS], 1989). Tobacco kills more than 435,000 Americans every year (American Cancer Society [ACS], 1994). A quick glance would lead many to believe that efforts for education and prevention about the dangers of tobacco should be concentrated among adults currently experiencing the negative impact of tobacco use. A closer study of the problem reveals that it is the chronic smokers, many who begin smoking patterns during adolescence, who are dying due to cigarette smoking.

Approximately 50% of regular smokers begin to smoke before the age of 18 (Johnston, O'Malley, & Bachman, 1992). Adolescent smoking patterns are established during the developmental years. More than 3,000 teenagers become regular smokers each day (Florida Department of Education, 1994). If the hundreds of thousands of deaths related to tobacco use are to be reduced, efforts on preventing must concentrate on smoking in the adolescent population, where the behavior often starts and becomes a habitual part of a person's everyday life. Children must be educated about the dangers of tobacco, armed with the skills to resist the pressure to use tobacco and an environment created that neither supports nor encourages cigarette smoking (Hillhouse, 1992).

Factors in Adolescent Smoking

Three reasons account for the startling increase in the rate of cigarette smoking among the adolescent population: peer pressure, heavy marketing efforts by the tobacco industry and the addictive nature of nicotine (USDHHS, 1994).

Peer Pressure

Children in the United States experience intense peer pressure. Smoking ranks at the top of the list of behavior initiated and influenced by peers. Over 1 million teens begin smoking every year. The pressure to use cigarettes can be both direct and indirect. Studies have shown that youth encounter direct pressure by peers. Over 50% of adolescents report smoking their first cigarette with a friend. The single best predictor of whether a young person will smoke is if they have a best friend who already smokes (ACS, 1994). Indirectly, the pressure to smoke is exerted by the sheer number of children using tobacco (USDHHS, 1994). Of the 70% of high school students who reported using tobacco, 13% use tobacco frequently (ACS, 1994). According to the Florida Youth Risk Behavior Survey, 24% of high school students had smoked an entire cigarette prior to age of 13 (Florida Department of Education, 1994).

Product Marketing

Pressure, however, occurs not only from peers. The massive marketing efforts by the tobacco industry also help explain the increase in adolescent smoking. Cigarettes are the most heavily marketed product in the United States, despite the fact they cannot be advertised on television or radio. The tobacco industry spends an estimated $3.6 billion annually for the marketing of tobacco products (Novello, 1992). A five-fold increase has occurred in the amount of money spent on advertising cigarettes since 1971 (American Lung Association [ALA], 1989). Much of the advertising is aimed at attracting a young audience to cigarette smoking (USDHHS, 1994).

Teenagers see ads for smoking in sports, news, women's, and entertainment magazines and newspapers. Tobacco companies also sponsor sporting and entertainment events that attract many youngsters. In 1986, about 1.4 billion dollars was spent on promotional activities including, but not limited to, distribution of free product samples, allowances paid to retailers for shelf space, and positioning and distribution of

promotional products with cigarette brand names and testimonials. Promotional products including mugs, T-shirts, and hats often do not carry the Surgeon General's health warnings regarding tobacco products. Cigarette companies are quick to argue that tobacco is unfairly being persecuted, since so many other products on the market have the potential to harm health. Tobacco, however, is the only legal product that causes death and disability even when used as intended (AMA, 1989).

Nicotine Addiction

Nicotine is the addictive substance found in cigarettes. Taken in high doses (70mg or 1 drop), it can be fatal. The amount of nicotine found in cigarettes ranges from .2mg to 2.2 mg. It is readily absorbed from tobacco smoke in the lungs, then rapidly distributed throughout the body by the pulmonary circulation. One in six people who experiment with crack cocaine become addicted and one in 10 people who experiment with alcohol become addicted, but nine in 10 people who experiment with nicotine become addicted (University of Florida, 1994). Pharmacologically and behaviorally the addictive properties of this substance are similar to that of cocaine and heroin. Eighty-five percent of teens who finish two cigarettes completely and overcome the initial discomforts of smoking will become regular smokers (American Psychiatric Association [APA], 1994).

Clearly the addictive properties of nicotine combined with the pressure exerted both by peers and cigarette companies help increase adolescent smoking and consequently causes a decline in their future health status. As depicted in the multidimensional model of health, tobacco attacks at the physical, mental, and social levels of health. These negative repercussions are felt not only by the individual, but by society as a whole.

Consequences of Smoking

On an individual level, the physical effects of tobacco use are both short-term and long-term. Initially cigarette smoking can cause rapid heartbeat, quickened pulse, and shortness of breath. Long-term effects of cigarette smoking include Chronic Obstructive Pulmonary Disorder, most commonly seen in smokers as chronic bronchitis or emphysema (AMA, 1990). Tobacco use puts the user at greater risk for developing cancers of the lung, bladder, mouth, larynx, pharynx, uterus, and kidney. Smokers also face a greater risk of developing heart disease. Mental effects from nicotine are most readily seen in the addictive characteristics displayed by a chronic smoker. In addition, 75% of all depressed people have a smoking history (University of Florida, 1994). Often adolescents addicted to smoking will show more concern about smoking their next cigarette than paying attention in class. This action can result in decreased learning and consequently, poor academic achievement. These youth also can be labeled as disruptive or deviant by their teachers and parents due to their smoking behavior (USDHHS, 1994).

The behavior of smoking costs the individual, but places a great burden on society, as well. The cost of the physical effects from smoking are paid by all of us. The 1992 U.S. Surgeon General's Report estimates the lifetime medical care costs for smokers at $501 billion dollars more than for nonsmokers, with a portion of the cost covered by tax revenues. The mental effects of cigarette smoking, and its cost to society, also can be viewed in terms of lost productivity. Cigarettes annually cost Americans $68 billion dollars in terms of medical expenses and lost productivity (ACS, 1994). Socially, cigarettes drain the United States of time, money, and worker productivity. These valuable resources must be diverted to provide care for those with cigarette-related health problems, lobbying for smoking issues, and smoking cessation programs. These resources otherwise could be put to use for the many pressing and less preventable issues of today.

Youth Smoking Curricula: Programs that Work

Adolescent Alcohol Prevention Trial (AAPT)

The Adolescent Alcohol Prevention Trial (AAPT), a longitudinal study, assessed the effectiveness of two social-psychology based strategies for preventing onset of adolescent drug use. The first strategy, Resistance Skills Training (RT), gave adolescents the skills necessary to refuse explicit offers for drugs. The premise behind this strategy is that adolescents initially use drugs because they lack social skills to refuse drug offers made by their peers, siblings and others. The second strategy, Normative Education (NORM), built on research showing that adolescents overestimate the prevalence and acceptability of drug use among their peers. NORM was designed to combat passive social pressures shown to be important risk factors in the onset of drug abuse among youth. Both programs also included information about the social and health consequences of tobacco use (ICU). The unique feature of AAPT was that each strategy could be measured effectively, helping researchers and educators determine the "active ingredient."

The AAPT program was administered to participants from 229 classrooms in 124 elementary schools in Los Angeles. Some classrooms received ICU and NORM, others received ICU and RT, and yet others received a combination of all three. Resistance training improved resistance skills, while normative education reduced prevalence estimates and strengthened beliefs about the unacceptability of drug use. However, the adolescents with the lowest prevalence estimates received both resistance training and normative education with the ICU. A problem exists with using resistance skills alone, the approach does not predict subsequent drug use. Many adolescents who received only RT believed a higher rate of drug use existed among their peers than was actually the case. The combination of RT and NORM addressed this issue, which may explain the better results for students who received a combination of the two strategies (Donalson, Graham, & Hansen, 1994).

In a similar activity, 22 high schools in San Diego County, California agreed to participate in a longitudinal study intended to assess the effectiveness of a school-based tobacco prevention program. Project SHOUT (Students Helping Others Understand Tobacco) involved approximately 1,800 students who served as control subjects and a similar number assigned to the SHOUT intervention condition. The program combined various educational, activist, and behavioral strategies to reduce the onset of regular tobacco use. Project SHOUT placed heavy emphasis on interpersonal skills development, especially those related to resisting peer pressure. Skills training did not result in long-term skill acquisition, and skill acquisition did not suppress tobacco use. Reinforcement of existing behavior, and effects of the natural environment, can override skills learned in an educational setting. While skills training alone did not produce a significant effect independently, when offered as part of a comprehensive program which included anti- industry exercises, lotteries, skilled undergraduate facilitators, and personalized as well as group interactions, it has shown to be more effective. Researchers concluded that resistance skills can be bolstered and made more effective only if the social and interpersonal environments also promote nonuse of tobacco (Elder, Sallis, Woodruff, & Wildey, 1993).

Creating an environment which discourages tobacco use represents the critical ingredient in decreasing the rates of smoking among the adolescent population (Novello, 1992). Findings from a study that focused on developing effective communication strategies for high risk youth offered four suggestions which potentially can be applied to the problem of cigarette use among our kids:

1. Allocate resources to communities so they can tailor and plan services to meet their specific needs.

2. Send clear and consistent messages to youth about risk behaviors such as tobacco.

3. Encourage parents and the community to become involved in activities that provide youth an alternative to smoking.

4. Promote comprehensive and integrated health education programs that address linked risk behavior simultaneously (Karini, Lynch, Arkin, & Maloney, 1993).

Victorian Tobacco Act

The Victorian Tobacco Act, passed in 1987 by Victoria, Australia, is now fully implemented. Small packs and free samples of cigarettes have been banned, and movie theaters no longer play cigarette ads. All outdoor ads, including billboards, for tobacco have been removed. There is no TV, radio, or press advertising of tobacco. The only ads that remain in Victoria are those inside shops at the point of sale and at a few sporting events.

Recently, the government ended advertisement of tobacco through sport and cultural events. For 15 years, Winfield, the top selling brand of cigarettes in Australia, sponsored Australian soccer, until the National Soccer League gave up tobacco and accepted sponsorship from a coalition of the Victorian Health Promotion Foundation. Cricket, another sport which Australians enjoy, also took a stand against tobacco. The scoreboard in one of Australia's most famous sporting venues the Melbourne Cricket Ground used to be called the Winfield Scoreboard. Thanks to the Victorian Health Promotion Foundation's Tobacco Sponsorship Replacement Program, prominent Quit (anti-smoking) signs now are displayed on the scoreboard as well as the surrounding grounds. Changes also occurred at other popular sporting grounds, amateur football matches, surfing, football and netball clinics, and National League football and basketball games which feature teams sponsored by Quit.

Sponsoring large sporting events gains public support for anti-smoking legislation. Because so many people benefit from tobacco tax money in Victoria, it would have been difficult to enact legislation without the support of the people of Victoria. Establishing the act and the foundation quadrupled funding for Victoria's Quit Smoking Education Act. Since the passage of the act, the percentage of smokers trying to quit has doubled. The prevalence of smokers has declined substantially and equally among low and high socioeconomic groups and smoking has declined substantially for boys and moderately for girls.

Overall, the program has made substantial progress in decreasing adolescent smoking. However, problems were encountered. For instance, while much less advertising of tobacco occurred in traditional sources, cigarette companies compensated with greater number and quality of indoor signs. Likewise, research showed that young people did not understand key words such as neonatal, lethal, and vascular used in the mandatory health warnings printed on packages of cigarettes. Victoria summarized lessons learned from their efforts to control and limit tobacco use in their population:

1. Warnings need to be understood by children as well as adults.

2. Promotional bans should be implemented without loopholes. Get expert legal advice on drafting and bureaucratic advice on enforcement. Time and money should be put into enforcement.

3. Sales to minors should be severely penalized, rigorously enforced, and penalties and prosecutions should be widely publicized.

4. Smokefree public places have important symbolic value and should be extended to the school environment.

5. Health education should position not smoking as positive adult behavior, should target the eventual recipient and the teachers, should be well marketed to the various players in the education system, and should be applicable and replicable to all schools in a system.

6. Pricing policies should be framed carefully so cigarettes are subject to regular price increases (Scollo, 1992).

Conclusion

Efforts devoted to helping our children stay healthy can be seen as protecting our most valuable natural resource in the present and investing in the future of our country. It can be concluded that policies to prevent tobacco use in the US must target, but should not be limited to tobacco advertising and promotions. School based prevention programs such as the Adolescent Alcohol Prevention Trial and Project Shout that identify social influences to smoke and that teach skills to resist those influences have consistently reduced adolescent smoking prevalence (USDHHS, 1994). Although restrictions on advertising are present, the current limitations should also be extended to include print media, sponsorships by tobacco companies of events such as sporting events and concerts, and point of sale displays. Targeting these areas will further decrease the volume of cigarette messages to which young people are exposed, thereby decreasing rates of smoking in this young population (Scollo, 1992).

Although these potential solutions to adolescent smoking require a long term commitment on the part of schools and the government, decreasing rates of smoking should never be considered too late. Within a few days after smoking cessation, mucus in the airways breaks up and clears from the lungs. Within a few weeks, circulation improves and, most importantly, risk of lung cancer begins to decrease (ACS, 1989). Addiction to nicotine no longer represents the ruling force of an adolescent's life. Deviant behaviors often promoted by use of tobacco will dissipate. The physical, mental, and social aspects of health in the adolescent improve.

Currently, tobacco use accounts for one in six deaths in America annually. A generation of adolescents who do not smoke will produce a decrease in the staggering number of deaths attributed to tobacco use. A potential exists for reducing medical care costs, decreasing the need for lobbying, and diminishing the demand for resources to combat the detrimental effects of tobacco. Our children are the nation's most valuable natural resource. It is our responsibility to give them a healthy and safe environment in which to grow and develop.

References

American Cancer Society. (1994). *Cancer: Facts and figures - 1994* (ACS Publication No. 5008.94). Atlanta, GA: National Headquarters, American Cancer Society, Inc.

American Lung Association. (1989). *Should tobacco advertising and promotion be banned?* (ALA Publication No. 1218).

American Lung Association. (1990). *Facts about emphysema* (ALA Publication No. 0301).

American Psychiatric Association. (1994). *Let's talk facts about substance abuse* (APA Publication No. 2260). Washington, D.C.: Author

Donalson, S. I., Graham, J. W., & Hansen, W. B. (1994). Testing the generalizability of intervening mechanism theories: Understanding the effectiveness of adolescent drug use prevention interventions. *Journal of Behavioral Medicine, 17*, 195-216

Elder, J. P., Sallis, J. F., Woodruff, S. I., & Wildey, M. B. (1993). Tobacco-refusal skills and tobacco use among high-risk adolescents. *Journal of Behavioral Medicine, 16*, 629-42.

Florida Department of Education, Prevention Center. (1994). Florida Youth Risk Behavior Survey Summary Report (FDOI & CDC Publication No. U87-CCU 408585-02) Tallahassee, FL.

Hillhouse, A. (1992). Strategies to prevent tobacco use by children. *World Smoking and Health, 17*, 6-8.

Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1992). Smoking, drinking, and illicit drug use among American secondary students, college students, and young adults, 1975-1992. *Drugs, Society, & Behavior, 94 95, 9*, 83-89.

Karini, R., Lynch, J., Arkin, E., & Maloney, S. (1993). *Developing effective health communication strategies for high risk youth outside of school.* (Publication submitted to the U.S.Department of Health and Human Services).

Novello, A. C. (1992). Youth: An urgent challenge for tobacco control. *World Smoking and Health, 17*, 2-5.

Scollo, M. (1992). Australia: Older and wiser about tobacco control. *World Smoking and Health, 17*, 13-15.

U.S. Department of Health and Human Services. (1989). *Reducing the health consequences of smoking: 25 years of progress. A report of the surgeon general.* USDHHS Publication No. CDC 89-8411.

U.S. Department of Health and Human Services. (1994). *Preventing tobacco use among young people. A report of the surgeon general.* USDHHS Publication No. CDC 94-7279.

University of Florida Brain Institute and Cancer Center. (1994). The Facts About Tobacco, Alcohol, and Other Drugs. (U of F College of Medicine Publication Vol. III, 4) Gainesville, FL.

Computer Communications Technology and the Future of Health Education

Lisa Nicole Peeler

Abstract

While evolution of the Internet has been occurring for more than 20 years, many of the resources useful to health educators have only recently become accessible. Advent of the World Wide Web and its ability to facilitate comprehensive Internet searches provide one example. This paper offers an overview of the Internet and several practical applications for health educators in all specializations. It also includes a discussion on the importance of quality control of health-related World Wide Web pages as a method of accountability in health education.

Introduction

An estimated 20 million people are regular users of the Internet, and they are capable of reading World Wide Web information (Cole, 1994; Gauger, 1994). By the end of 1995, technology experts predicted 100 million Internet users worldwide, and that number is expected to double in 1996.

People currently accessing the Internet can be classified into three categories. The traditional Internet user is someone associated with a university or research institution, or someone involved in a technical career. The second type of user includes employees of the federal government and large businesses that have become connected to the Internet in order to receive the benefits of electronic mail and information sources available on the World Wide Web. The third and newest type of user includes the more than 7 million people who have access to the Internet from their homes and offices through commercial Internet providers. Health educators are represented in each of the three categories of Internet users.

With efficient use of the Internet and World Wide Web, health education professionals can establish a worldwide presence. Through the Internet, health educators in all areas of specialization (school and college health education, public health education, patient education, worksite health promotion, and safety education) possess the potential to generate vast amounts of accurate and pertinent information to make available for their peers, other professionals, and the populations they serve.

An Overview of the Internet

The Internet involves several million computers all connected to each other. While the Internet is not the only computer network available, it is the most advanced and the most widely used network (Santoro, 1994). Two primary utilities are available on the Internet: computer-mediated communication, and information access (Santoro, 1994). Computer-mediated communication facilitates personal communication, whereas information access allows persons to access a remote database of information for local use. Thousands of online databases and libraries are available to access for personal and professional use.

Computer-Mediated Communication

Computer-mediated communication includes electronic mail (e-mail), computer conferencing, and interactive messaging (Santoro, 1994). Electronic mail provides a convenient way to send messages to other people with computers. E-mail can be transmitted between people in the same office, in different locations, or between one person and several recipients. Most electronic mail messages are delivered immediately, regardless of whether the messages are sent across the office or across the country.

Electronic mail offers numerous advantages. E-mail does not require postage, it does not involve paper, and correspondence may be maintained and managed in a database. As a convenience, electronic mail users send and read mail at times suitable to their schedule (Gauger, 1994; Santoro, 1994). To gain access to electronic mail, an e-mail client program and an account on an e-mail server are required.

Similar to electronic mail, computer conferencing provides a medium for subject-based conferences. Subscribers may obtain information or participate in discussions with other users (December, 1994). The most popular conferencing system involves the mailing list approach used by LISTSERV (Santoro, 1994). List-based conferencing systems use a mailing list server to compile and maintain membership lists, route postings to members, and provide other support functions. Subscription requests are sent by e-mail to the address of the server maintaining the desired list.

A LISTSERV is normally supported by professional organizations committed to dissemination of subject-specific information. A LISTSERV is available for numerous health education areas, and several provide instructional information. A list of over 1,200 electronic conferences is available in "The Directory of Scholarly Electronic Conferences" (Kovacs, 1993).

The final type of computer-mediated communication on the Internet is interactive messaging, also called TALK or "chat." Interactive messaging is analogous to an "electronic conversation" (Gauger, 1994). All persons communicating must be online simultaneously. Professionals use interactive messaging to conduct meetings where time and distance, under normal circumstances, would make meeting difficult.

Information Access

The Internet facilitates communication with other users, whether with a group of peers or personal. It also, however, offers access to a multitude of information. Directory services, Telnet, File Transfer Protocol, Gopher, and the World Wide Web are several Internet applications used to access this information. To use electronic mail in computer-mediated communication, the user must know the e-mail address. Databases, or directory services, have been created for easier location of directory information. Unfortunately, no complete listing exists of e-mail addresses online.

Telnet Services

Telnet, one of the original Internet services, enables users to connect to other host computers through the Internet (Gauger, 1994). Typically, Telnet is used for providing access to online public access catalogues for libraries. Databases and services available through the Internet often are free, but some charge for their services. Yanoff (1993) offers a resource, popularly known as "The Internet Services List," which contains services accessible through Telnet.

Complementary to Telnet is the File Transfer Protocol (FTP). FTP allows users to transfer computer files from an Internet host to their individual computers. Text documents, computer programs, sound files, images, and video provide examples of the types of files which may be transferred (Gauger, 1994). FTP sites often prove difficult to locate on the Internet. Consequently, Archie was developed as a tool to facilitate locating FTP resources. Archie reports the Internet address of the computer containing the files and provides a description of where on the computer the file is located. A user may Telnet to a computer running an Archie server, or client software may be installed (December, 1994).

Gopher Systems

Built on the Internet applications of Telnet and FTP, the Gopher system is based on the client server model. The basic structure of the Gopher system is the menu. A network of Gopher servers connect data with a set of interconnecting menus. Menus can point to other menus or objects. Objects may be any kind of computer file, it may be a document or a link to a Telnet connection. When using Gopher, the user may move from one Gopher server to another without realizing the location of the server, since it takes place "behind the scenes" (Santoro, 1994). Thus, users enjoy a consistent working path, where they may browse and retrieve information without needing to know a particular address (e.g., the Gopher of the National Heart, Lung, and Blood Institute may be found at gopher: gopher.nhlbi.nih.gov:70 1).

Gophers also may be used for publication or dissemination of information among members of an organization. Gopher is growing rapidly in the university setting in the form of campus-wide information systems (CWIS) which offer students pertinent information about the university. Locating Gopher menus – whether as government publications, organization information, or a CWIS has been made easier with development of a locating tool called Veronica (December, 1994). Veronica is a gopher accessible database that cross-references gopher space. Veronica returns a list of pointers to objects that correspond to the user's search conditions.

The World Wide Web

The World Wide Web (WWW) represents the newest application for browsing and retrieving information on the Internet. The WWW was introduced to the Internet in late 1994. Since its creation, more than 3.3 million pages have been created. Unlike the menu-based Gopher system, WWW is based on hypertext (Davis, 1995; Desey, 1994). When the user runs a World Wide Web client, the user receives a starting document. The starting document contains highlighted, underlined words and or phrases called hypertext which indicate a link to other sites on the Internet. Hypertext links provide electronic cross references that allow access to nearly all of the information available on the Internet. The link may be made to a Web page, an FTP site, a Telnet connection, or Gopher (Sullivan, 1994). By simply clicking on the hypertext, the requested destination will be downloaded and displayed on the user's computer (December, 1994; Santoro, 1994).

Other distinguishing features of the World Wide Web include its ability to incorporate text, graphics (including photographs), sound, and video. Web pages generally are aesthetically pleasing and easy to read. Pages on the WWW can be reached using their Uniform Resource Locator (URL). For example, the Centers for Disease Control and Prevention created a home page on the Web with the URL of http: www.cdc.gov. Table 1 provides a list of other selected URLs of potential interest to health educators.

Numerous other services on the WWW assist users in locating specific pages. Virtual Libraries exist which categorize Web information by subject. Other services provide searchable catalogues which accept user-provided keywords. Web Crawler is one such service.

An emerging concern surrounding the World Wide Web involves the quality of information placed on Web pages. In traditional publishing formats, quality can be partly controlled by academic and technical requirements. On the WWW, however, no such requirements exist. While peer-reviewed journals may be found on the Web, most of the information has

not been subjected to review. With little difficulty, users can create a site and place it on the World Wide Web for other users to visit (Maddux, 1994).

Implications for Communications Technology in Health Education

The Internet holds the potential for both computer-mediated communication and access to vast amounts of information. Benefits offered by the Internet are not exclusive to one area of specialization in health education. Internet applications may be employed in all areas. Electronic mail facilitates communication with colleagues by making delivery quicker and generally less expensive. Participation in discussion groups on topics of shared interest, regardless of the specialization or worksite, allows members on the list to offer insights from similar projects or problems they have experienced. Job postings may be disseminated through mailing lists and other job posting services. Home pages on the World Wide Web often offer a link to employment opportunities.

The World Wide Web offers access to current health information in the form of documents, fact sheets, and other on-line health-related publications. With the trend of schools moving to active learning, the World Wide Web offers an excellent mechanism for students to learn about health (Rutherford & Grana, 1995). While all classrooms are not yet equipped so every child may have a computer to "surf the net" for assigned health information, schools often have a computer laboratory where students spend a portion of the school day. Students may use some of this time searching for assigned information topics and pages, thereby learning about health. For school health educators numerous health-related lesson plans available on the Web offer new and innovative ideas for school health education programs. The ideas offered here are but a few of the

Table 1

Examples of Health-Related URLS

Advil Forum on Health Education
http: 199.97.97.11 advil main.html

Centers for Disease Control and Prevention (CDC)
CDC Home Page
http: www.cdc.gov

CDC National AIDS Clearinghouse Web Server
http: cdcnac.aspensys.com:86

Children's Health & Educational Resources; Kid Source Online
http: www.kidsource.com

Educational Materials
http: nhic-nt.health.org htmlgen htmlgen.exe

Health Information Resources
Federal Health Information Centers and Clearinghouses
http: nhicnt.health.org htmlgen htmlgen.exe Keywordlist

Morbidity and Mortality Weekly Report (MMWR)
http: www.cdc.gov epo mmwr mmwr.html

National Institute on Drug Abuse (NIDA)
NIDA Home Page
http: www.nida.nih.gov

The Nutrition Expert
http: www.alaska.net ~tne

Office of Disease Prevention and Health Promotion (ODPHP)
ODPHP Home Page
http: odphp.oash.dhhs.gov

Patient Education Resources
http: users.aol.com renmed Pat_Ed_Resources.html

Safer Sex Page
http: www.safersex.org

U.S. Food and Drug Administration (FDA)
FDA Home Page
http: www.fda.gov fdahomepage.html

numerous applications the WWW has in health education. Continued exploration will define specific contributions the Web can make to the various health education specializations.

These examples illustrate the possible benefits the Internet and WWW offer to health education. Such benefits, however, will create a spill-over effect for the image of health education as a profession. Other professionals, and the public at large will be able to see the work of health educators through documents published on the Web.

Concern for the quality of these documents, however, must be addressed. Web pages, like other new information dissemination procedures, create their own set of criteria for publication which should be considered by the author. When submitting a document for publication on the WWW, the author should not only attend to details such as content accuracy and the organization of the information, but links offered to the user, use of graphics, and aesthetics also must be considered with this type of interactive document. While some of these criteria are similar to print publications, others are representative of the uniqueness of this type of publishing. It is essential that health educators in all areas of specialization take this new set of criteria into consideration when publishing quality documents for the Web.

In a growing profession such as health education, accountability represents an integral part of development. Quality health and health-related World Wide Web pages provides one step in the process.

Conclusion

Health education professionals can with relative ease gain access to the Internet. Once installation of appropriate networks and mechanisms for support are established, it is relatively simple to "traverse the Internet for a wide range of professional activities" (Frisse, Kelly, & Metcalfe, 1994, p. 23). From communicating with colleagues, remaining current on topics of professional and personal interest, and accessing information from a variety of resources on a variety of topics, employing all aspects of the Internet affects every area of health education.

References

Cole, G. (1994, July 29). The Superhighwayman. *Times Educational Supplement*, p. 21.

Davis, P. (1995, January). Welcome to the world-wide web. *Internet Librarian*, p. 51-55.

Desey, D.E. (1994). World-wide web: Adding multimedia to cyberspace. *Tech Trends, 39*(4), 15-16.

December, J. (1994). Electronic publishing on the Internet: New traditions, new choices. *Educational Technology, 34*(7), 32-36.

Frisse, M.E., Kelly, E.A., & Metcalfe, E.S. (1994). An internet primer: Resources and responsibilities. *Academic Medicine, 69*(1), 20-24.

Gauger, R. (1994). Access the internet: How to use this global resource for science education. *The Science Teacher, 61*(6), 26-29.

Kovacs, D. (1993). *Directory of scholarly electronic conferences* [On-line]. Available: http: www.mid.net:80 KOVACS .

Maddux, C.D. (1994). The internet: Educational prospects and problems. *Educational Technology, 34*(7), 37-42.

Rutherford, L.H., & Grana, S.J. (1995). Retrofitting academe: Adapting faculty attitudes and practices to technology. *Technological Horizons in Education, 23*(2), 82-86.

Santoro, G.M. (1994). The internet: An overview. *Communication Education, 43*, 73- 86.

Sullivan, E. (1994). HTTP eases access to internet info. *PC Week, 11*(4), 71-73.

Yanoff, S. (1993). *Special internet connections* [On-line]. Available: http: www.uwm.edu Mirror inet.services.html.

Advantages and Limitations of Health Risk Appraisals (HRAs) in Promoting Health Behavior Change

Mariaclara Escoral F. Bago

Abstract

Americans are becoming increasingly aware of the consequences of lifestyle and behavior to their health. Consequently, a number of techniques have emerged to quantify lifestyle and behavior risks as they relate to health. One such innovation - the Health Risk Appraisal (HRA) - has been used for 20 years in a wide variety of settings to assess individual health behavior. Among its various uses, the HRA technique has been employed for motivating individuals in health programs, integrating prevention in clinical practice, summarizing corporate health problems, and measuring general health behavior patterns. Given the widespread interest in the HRA, health educators should consider carefully the contribution HRAs have made toward health promotion and behavior change. This paper documents implementation of the HRA and reviews its scientific basis and effectiveness for stimulating behavior change.

Introduction

Whether facing the threat from harmful rays of the sun or a diet high in saturated fat, Americans are becoming increasingly aware of their lifestyles and how they may affect their health (DeFriese & Fielding, 1990). Lifestyle and behavior, in addition to personal history, predispose individuals to certain diseases, illness, or even premature death. From regular aerobic exercise to increased seatbelt use, much of lifestyle and behavior can be controlled and maintained. According to the U.S. Surgeon General, in 1991 more than half of deaths reported in the U.S. were directly attributable to unhealthy lifestyle habits with tobacco use, sedentary lifestyle, and diet being the top three contributors (Jorgensen, 1994).

Media attention reflects the increased concern for health through frequent reports addressing health risks due to individual behavioral factors, nutritional intake, and environmental exposures (DeFriese & Fielding, 1990). However, for several reasons, it is unrealistic to expect one to remember all the known risks to health. First, data dissemination through brochures and information packets may be inconsistent due to the various reference sources. Second, changes in health behavior must be monitored continually to keep abreast of current research. Finally, people often lack an appreciation or understanding of true differences in risk between activities or exposures (DeFriese & Fielding, 1990).

The need to quantify lifestyle and health behavior risks into a usable and comprehensive form has resulted in the creation of numerous assessment tools and surveys. During the past two decades, Health Risk Appraisal (HRA) instruments have become a popular approach to helping people identify their health risks and to motivate lifestyle behavior change (Bechtel & Franklin, 1993; Mayer et al., 1994).

Currently, the HRA instrument represents a standard offering in the health promotion repertoire (Schoenbach, Wagner, & Beery, 1987). According to Tolsma (1983), health promotion involves providing people with the information, education, and skills they need to choose and maintain healthful behavior. As health educators, we seek to effectively carry out these duties with the tools available. In addition, we must be able to critically assess the application and effectiveness of such activities. As outlined in the Role Delineation Project, two specific responsibilities of our profession include implementing health programs and evaluating their effectiveness (Wolfe, Cleary, & Stone, 1989). This paper examines the process of implementing the HRA and identifies limitations to its effectiveness in stimulating healthful behavior change.

What are Health Risk Appraisals?

Health Risk Appraisals (HRAs) are instruments that assist in the identification of risk factors that affect life expectancy (Beery, Schoenbach, & Wagner, 1986). The HRA produces a summary of health risks based on questionnaire information provided by the respondent. By combining epidemiological data, mortality statistics, and computer technology, personal risk factors are assigned values, calculated, and expressed as an "appraisal" or "risk" age (Beery et al., 1986). The "appraisal age" - a unique statistical feature of the HRA - estimates the age at which total mortality for all people (of the same race and gender) is the same as that projected for the client (Gazmararian, Foxman, Yen, Morgenstern, & Edington, 1991). Thus, people who score an appraisal age greater than their own chronological age are placed at greater mortality risk than their average age.

The HRA risk projection involves two basic components

(1) a table of 10-year mortality probabilities for each of the 10 leading causes of death for each gender, race (White or Black) and 5-year age groups, and (2) the application of "risk factors" to the information provided by the mortality tables, which approximates the risk of dying for the average person of the client's age, race, and gender (Schoenbach, Wagner, & Karon, 1983). Both controllable risk factors (i.e., smoking, diet, and exercise) and uncontrollable risk factors (i.e., race, age, heredity, and gender) are considered in the calculations. While the HRA does not predict death or diagnose disease, it does measure excess health risks at the time of the appraisal (Gazmararian et al., 1991). The HRA consists of three essential elements:

1. An assessment of personal health habits and risk factors, based on a questionnaire completed by the client. This information may be supplemented by biomedical measurements, such as height, weight, blood pressure, and cholesterol readings.

2. A quantitative interpretation or estimation of the individual's future risk of illness, disease, and or death.

3. Provision of educational and or counseling sessions regarding alternative health behaviors that may decrease the risk of disease or death (DeFriese & Fielding, 1990).

The final product of the HRA includes a computerized report that summarizes the probabilities of premature death due to individual risk factors. The report also includes a calculated number of "risk years" that can be eliminated by making the appropriate health behavior changes. Most HRAs provide the individual with risk age, target risk age, your group, target-group and population averages, positive lifestyle habits, desirable weight range, and total risk years.

Advantages of HRAs

Over the past 20 years, HRA surveys have become popular instruments for promoting healthful individual and group behavior change (DeFriese & Fielding, 1990). On an individual level, the HRA describes health risks specific to a person's age, gender, and health history. The Carter Center HRA, for example, takes such information and measures individual risk in "years of potential life lost." One of the most important advantages to this approach is that risks are prioritized so an appropriate amount of attention can be given to behaviors with the most impact on health (Sheehan, 1990). With the health-related information currently available, the HRA personalizes "risk" data in a manner that allows individuals to make more informed and productive decisions about their health behavior (Polakoff, 1990).

Another important aspect of the HRA involves identification of both controllable and uncontrollable risk factors. While heredity has some effect on life expectancy, the HRA enables individuals to overcome survival odds through behavior modification with the factors that they can control. For each health behavior change, a calculated number of "risk years" can potentially be regained to lower the overall health risk age. It is important to caution, however, the HRA does not predict life expectancy on an individual level. The estimate of lost life expectancy cannot predetermine exactly what will happen to one person, but only to a group exhibiting similar risk factors (Sheehan, 1991).

Since the advent of computer technology, HRA programs also have the enhanced ability to provide individualized feedback to the client. In a study done by Pilon & Renfroe (1990), a computerized HRA program was evaluated to determine differences in health risk behaviors. The results suggested that interventions involving focused, written feedback on risk factors, private counseling, and risk reduction education classes provided the important motivation for individuals to make significant lifestyle changes (Pilon & Renfroe, 1990). According to Sherman (1990), individuals are encouraged to make behavioral changes when they are shown during their follow-up sessions that lifestyle changes can reduce individual health risks.

On a group level, HRAs can be easily delivered and employed in a variety of settings. Examples of its utilization include motivating participation in health promotion programs (Anderson & Anderson, 1991; Licciardone, 1992); summarizing corporate health problems for planning in future programs (Bailey, Rukholm, Vanderlee, & Hyland, 1994; Gottlieb, Weinstein, Baun & Bernacki, 1992); integrating prevention in clinical practice (Lusk, 1994; Pilon & Renfroe, 1990); and measuring general health behavior patterns in large populations for public health campaigns (DeFriese & Fielding, 1990). HRAs also have been useful for people involved in professional health care. Data can be used to identify health risks and trends, design cost-containment strategies, as well as establish disease prevention and health promotion programs. Also, through periodic HRA examination, companies can focus on preventable conditions, identify employees likely to develop health problems, and direct resources more effectively (Polakoff, 1990).

Overall, HRA utilization offers many advantages. First, it provides health educators a rationale and structure for focusing discussions on health and lifestyle. Second, it relies on self-administered questionnaires, simple physiologic measurements, and computer-assisted calculations, making implementation to large groups feasible and cost effective. Finally, it is consistent with established values of society and with current thinking about lifestyle and disease (Wagner, Beery, Schoenbach, & Graman, 1982; Beery et al, 1986).

Limitations of HRAs

Due to the popularity of the HRA, concerns have been expressed about methodology and applicability in health promotion, health education, and clinical health care. The most frequent concerns deal with quality of the underlying epidemiological data, limitation of available statistical procedures, methods of handling missing data, and its application to different population groups (Schoenbach et al., 1987; DeFriese & Fielding, 1990).

Effectiveness in behavioral change

The HRA possesses the unique ability to use epidemiological data and statistics to calculate quantitative risk values for individuals. By transmitting individual mortality risk information, HRAs represent a reasonably efficient and seemingly effective method of stimulating change in behaviors, attitudes, and beliefs (Gazmararian et al., 1991). However, little empirical evidence confirms that the messages provided produce any significant effect on the client. Unfortunately, existing studies do not provide clear or consistent evidence to determine whether the HRA produces any effect on changing health beliefs or stimulating behavior change (Schoenbach et al., 1987).

While many uncontrolled studies have reported positive effects on health behavior, methodological problems in studying behavioral change severely limit the scientific validity of HRA of these studies. A number of randomized controlled trials provide mixed and ambiguous results (Schoenbach et al., 1987). However, several desirable but non-quantifiable effects of the HRA on health-related beliefs, attitudes, and behaviors have been cited when combined with counseling or education. In addition, HRAs may stimulate interest and increased participation in health promotion programs (Wagner et al., 1982).

Scientific Basis of Risk Assessment

Another consideration involves soundness of the scientific basis for individual risk assessment. While every step of the HRA computation sequence has been criticized, it is important to regard the validity, credibility, and value of the message provided to the client (Wagner et al., 1982). Because the HRA bases its risk values on extrapolations of data from only two major epidemiological investigations (Framingham Heart Disease Study and American Cancer Society Study), concern persists about its application to entire population groups. These studies mainly were conducted with middle-aged, middle-class, White males. Evaluations of individuals in other sub-groups, such as ethnic populations, adolescents, senior citizens, and those from a low socioeconomic status, may not yield accurate risk factor values or mortality projections (Beery et al., 1986).

Until further data are available on other demographic and minority groups, and applied to the HRA, health educators cannot conclude with confidence that the risk projections are fully valid. Health educators should acknowledge to their clients these limitations during their educational counseling sessions and individually supplement results with information packets, brochures, and or other resources.

Sources of inaccuracy

Several articles have considered methodological issues related to the HRA process that impair the validity and relevance of the health education message (Killeen, 1989; Yankauer, 1989; DeFriese & Fielding, 1990). Schoenbach et al. (1983) cite sources of inaccuracy which include geographical differences in mortality, errors in death certificate coding cause of death, and variation of chronic diseases between the general population and the HRA clientele.

Yankauer (1989) identifies two assumptions made in the actual survey response and feedback process that may also represent sources of inaccuracy. First, the process assumes recipients of the HRA survey are capable of reporting relevant and accurate information. Cholesterol levels, for example, are usually beyond recall capability or even unknown. Sensitive topics such as alcohol consumption at work can lead to false reporting. Second, the process assumes that clients receive and understand the message. The feedback portion of the HRA process must be communicated effectively to clients for potential behavior change to occur (Yankauer, 1989).

Other possible sources of response error include response variation to the instrument at that particular time (i.e., person may overestimate average daily exercise after a day of heavy exercise); variation in physical status of clients from one time to another (i.e., blood pressure or heart rate taken at different times of the day); inaccurate or incomplete response to question items; and processing of information from the instrument to a computer (Killeen, 1989).

Reliability

To provide accurate estimates of mortality and morbidity risks, HRAs must generate a relatively high reliability score. Reliability refers to the degree to which measurements are affected by random error. Thus, the higher the reliability, the more stable a measurement is produced (Sacks, Krushat, & Newman, 1980). Smith, McKinlay, & McKinlay (1989) noted several methodological limitations that make it difficult to generalize about the reliability of HRAs. First, studies often were based on a limited sample of self-selected volunteers. It remains unclear whether these results can be representative of the general population. Second, in a problem common with test-retest analysis, reliability may be confounded with actual change during the intervening period.

In their study, Smith et al. (1989) demonstrated that respondents generally gave consistent reports for the following three risk items: family history, cigarette smoking, and relative weight. Self-reports of physiological status (blood pressure) and lifestyle (diet, physical activity, and stress) were not consistent. In this study, inconsistencies in values between baseline and follow-up were more likely to be attributed to unreliability associated with self-reporting. In addition, first-time completion of the HRA can motivate respondents to obtain more accurate information about family history, blood pressure, or cholesterol, so future responses may appear inconsistent (Smith et al., 1989).

These findings pose several implications for health educators. First computation and mechanical errors tend to reduce the reliability of self-scored instruments. Thus, the utility of computerized HRAs are more desirable. Second, reliability of

HRA instruments can increase dramatically by measuring specific risk factors at the health promotion site, rather than relying on self-reports. Finally, health educators should understand that as reliability declines, it becomes more difficult to distinguish changes in risk status from random error. This factor is important when assessing and evaluating the effects of health promotion interventions (Smith et al., 1989).

Conclusion

Health risk appraisals have rapidly become an essential instrument in health promotion. HRAs have been implemented in a variety of settings to assess individual as well as group behavior. HRAs can be powerful motivators for behavior change when executed properly, thus health educators should remain knowledgeable on their effectiveness. Providing individualized health risk feedback is key to positively affecting health behavior among individuals and groups. However, much work is still needed in areas of instrument development and application to different populations.

According to DeFriese & Fielding (1990), the success of future HRAs depends on advances occurring in the next few decades. While new developments need to consider changing social and cultural environments, they should also include sociopolitical climates within the communities, schools, and workplace (Ribisl & Reischl, 1993). Challenges for the future involve funding new and reliable sources of risk-related data, improving the estimate of environmental risks (such as chemical, biological, and temperate hazards), increasing the knowledge about the effects of medications and dietary supplements, and providing specific individual feedback for more personally relevant information (DeFriese & Fielding, 1990). Other opportunities lie in technological developments paralleling the changes occurring with new computer capabilities.

References

Anderson, R.C., & Anderson, K.F. (1991). Worksite health promotion: The benefits of providing personal health status feedback and education programs to employees. *American Association of Occupational Health Nurses Journal, 39*(2), 57-61.

Bailey, P. H., Rukholm, E. E., Vanderlee, R., & Hyland, J. (1994). A heart health survey at the worksite. *American Association of Occupational Health Nurses Journal, 42*(1), 9-14.

Bechtel, G. A., & Franklin, R. (1993). Health risk appraisal differences between well elderly and university students. *Journal of Community Health Nursing, 10*(4), 241-247.

Beery, W.L., Schoenbach, V.J., Wagner, E.H. (1986) *Health risk appraisal: methods and programs, with annotated bibliography.* (DHHS Publication No. 86-3396). Washington, DC: National Center for Health Services Research and Health Care Technology.

DeFriese, G. H., & Fielding, J. E. (1990). Health risk appraisal in the 1990s: Opportunities, challenges, and expectations. *Annual Review Public Health, 11*, 401-418.

Gazmararian, J. A., Foxman, B., Yen, I. L., Morgenstern, H., & Edington, D. W. (1991). Comparing the predictive accuracy of health risk appraisal: The Centers for Disease Control versus Carter Center Program. *American Journal of Public Health, 81*(10), 1296-1301.

Gottlieb, N. H., Weinstein, R. P., Baun, W. B., & Bernacki, E. J. (1992). A profile of health risk among blue-collar workers. *Journal of Occupational Medicine, 34*(1), 61-68.

Jorgensen, C. M. (1994). Health education: What can it look like after health care reform? 1993 SOPHE Presidential Address. *Health Education Quarterly, 21*(1), 11-26.

Killeen, M. L. (1989). What is the health risk appraisal telling us? *Western Journal of Nursing Research, 11*(5), 614-620.

Lieciardone, J. C. (1992). The planning, development, and implementation of a work-site health promotion program: A case study. *Journal of the American Osteopathic Association, 92*, 213-218.

Lusk, S. L. (1994). Worksite health promotion and disease prevention studies. *American Association of Occupational Health Nurses Journal, 42*, 614-616.

Mayer, J. A., Jermanovich, A., Wright, B. L., Elder, J. P., Drew, J. A., & Williams, S. J. (1994). Changes in health behaviors of older adults: The San Diego Medicare Preventive Health Project. *Preventive Medicine, 23*, 127-133.

Pilon, B. A., & Renfroe, D. (1990). Evaluation of an employee health risk appraisal program. *American Association of Occupational Health Nurses Journal 38*, 230-235.

Polakoff, P. L. (1990). Health risk appraisal sound tool for developing health care strategy. *Occupational Health and Safety, 59*(12), 27, 30.

Ribisl, K. M., & Reischl, T. M. (1993). Measuring the climate for health at organizations. Development of the worksite health climate scales. *Journal of Occupational Medicine, 35*(8), 812-824.

Sacks, J. J., Krushat, W. M., & Newman, J. (1980). Reliability of the health hazard appraisal. *American Journal of Public Health, 70*(7), 730-732.

Schoenbach, V. J., Wagner, E. H., & Beery, W. L. (1987). Health risk appraisal: Review of evidence for effectiveness. *HRS: Health Services Research, 22*(4), 553-577.

Schoenbach, V. J., Wagner, E. H., & Karon, J. M. (1983). The use of epidemiologic data for personal risk assessment in health hazard health risk appraisal programs. *Journal of Chronic Diseases, 36*(9), 625-638.

Sherman, Z. (1990). Health risk appraisal at the worksite. *American Association of Occupational Health Nurses Journal, 38*, 18-24.

Sheehan, G. (1991). Health-risk appraisals. *The Physician and Sports Medicine, 19*(5), 41.

Smith, K. W., McKinlay, S. M., & McKinlay, J. B. (1989). The reliability of health risk appraisals: A field trial of four instruments. *American Journal of Public Health, 79*(12), 1603-1607.

Tolsma, D. D. (1983, March). *The role of health risk appraisal in health education.* Paper presented at the meeting of the Centers for Disease Control: HRA Users Conference, Atlanta, GA.

Wagner, E. H., Beery, W. L., Schoenbach, V. J., & Graham, R. M. (1982). An assessment of health hazard health risk appraisal. *American Journal of Public Health, 72*(4), 347-352.

Wolle, J. M., Cleary, H. P., & Stone, E. J. (1989). Initiation of a voluntary certification program for health education specialists. *Public Health Reports, 104*(4), 396-402.

Yankauer, A. (1989). Process and measurement issues in health risk appraisal. *American Journal of Public Health, 79*(12), 1598-1599.

Knowledge of Universal Precautions by Student Teachers and Cooperating Teachers in Illinois: Implications for Pre-service Education

Roberta L. Lyons and Debra L. O'Connell-Barlges

Abstract

According to the Illinois Health and Safety Act, Universal Precautions in-service training is required of all Illinois state employees, inclusive of teachers. It is unclear, however, if this training is required of student teachers. During unique circumstances, student teachers may be unintentionally left alone and are responsible for the safety and well-being of their students. Without accurate knowledge, student teachers may administer first aid inappropriately or expose themselves and their students to infectious pathogens, such as human immunodeficiency virus or hepatitis B virus.

Interviews with key informants from the national level to the local level determined existing policies procedures neglect the in-service training of student teachers. A survey of Illinois State University student teachers determined a need exists for pre-service training. Further research with cooperating teachers serving as on-site supervisors for Illinois State University student teachers reaffirmed the findings. Therefore, adequate preparation of student teachers before entering school classrooms is an omission which needs to be addressed.

Introduction

One in every 200 Americans is presently infected with the human immunodeficiency virus (HIV), the virus which causes acquired immunodeficiency syndrome (AIDS). HIV AIDS is now ranked in the 10 leading causes of death in the United States (U.S. Department of Health and Human Services, Centers for Disease Control, 1992). The United States Department of Health and Human Services, the Public Health Service, and the Illinois Department of Labor recommend all federal and state employees practice Universal Precautions, a method of infection control that assumes all human blood and specified human body fluids are infectious. This recommendation applies to individuals employed in educational settings, such as elementary, middle, junior and secondary schools. However, there are individuals educating students who are non-employees. They are student teachers doing internships and gaining valuable experience while working with cooperating teachers. Questions about compliance to the recommendation involving the practice of Universal Precautions arise with the student teacher status of non-employee.

Further reinforcement of HIV education for students attending colleges and universities comes from an objective in *Healthy People 2000*. Objective 18.11 states:

> *Provide HIV education for students and staff in at least 90% of colleges and universities. Colleges and universities can help prevent the spread of HIV infection by assuring that their students and staff are educated about how HIV is and is not transmitted, how to prevent transmission, and how to assess their own risk of infection accurately. In a campus community, students and faculty interact in many ways, allowing a well informed staff many opportunities to educate their students about HIV infection (U.S. Department of Health and Human Services, 1990).*

Whether an employee or non-employee, noncompliance with Universal Precautions in a school setting could prove to be costly for all involved (Fennell, 1991). Unfortunately, financial and time constraints have inhibited the proper training of student teachers in Illinois universities before they embark upon their student teaching assignments (J.T. Goeldi, personal communication, October 19, 1994). Although individual Illinois school districts are liable for their student teachers, many districts lack the knowledge, funding and time, which inhibits proper training.

In accordance with the Illinois Health and Safety Act (H. PA 87-245), all Illinois state school district employees must receive training about "Universal Precautions," the Bloodborne Pathogens Exposure Control Plan and have the option of receiving the hepatitis B vaccine (Health and Safety Act, 1994). However, it is unclear whether student teachers receive this training or the option of receiving the vaccine, as they are not state employees according to the above statement.

A thorough investigation of the literature was conducted to assess the existence of educational curriculum and materials appropriate to meet student teachers' needs regarding Universal Precautions prior to their student teaching experience. The review of the literature revealed Universal Precautions information/training for student teachers is non-existent. Many college health texts address bloodborne pathogens, infectious diseases and first aid techniques. Yet, these fall short of adequately preparing student teachers for any possible

emergency situations, such as an exposure incident which may occur in their teaching assignment (U.S. Department of Health and Human Services, Centers for Disease Control, 1988).

Further investigation led to the Illinois School Code, which mandates individual school districts are obligated to prepare the student teachers as if newly employed to protect them from bodily harm (Illinois State Board of Education, 1994). Regarding the implementation of these mandates, a representative of the Illinois State Board of Education stated, ". . . how it operates in practice and how they inform student teachers is up to the individual school district" (S. Bentz, personal communication, November 16, 1994).

Plans and goals were developed to assess student teachers' knowledge of Universal Precautions, what procedures were utilized to inform student teachers of the Bloodborne Pathogens Exposure Control Plans at their student teaching institutions, and what type of educational curriculum could be infused most efficiently into the existing education major courses.

Methods

The research project was funded by a mini-grant through the Illinois Postsecondary HIV Prevention Project, College of Education at Illinois State University. The Illinois Postsecondary HIV Prevention Project is funded by the U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, and Division of Adolescent and School Health. A brief presentation was provided to 30 future health educators regarding Universal Precautions. Response and questions raised about Universal Precautions were overwhelming and alarming. These students alerted us to their lack of knowledge and understanding of bloodborne pathogens, their transmission modes, and procedures to follow should they incur an exposure incident.

In Fall 1994, a questionnaire was developed by the authors to assess student teachers' knowledge of Universal Precautions, where they obtained their knowledge, had they been shown the location of a Universal Precautions kit, and who showed them the location of such a kit. The questionnaire consisted of four categorical questions. Purpose of the questionnaire and approval from the Office of Clinical Experiences and Certification Processes at Illinois State were clearly stated. Participation in the study was voluntary and confidential. Prior to survey distribution, Institutional Review Board approval for human subjects was obtained from Illinois State University. The survey was pilot tested by a group of health education students for clarity, general organization, practicality of format, and any content inaccuracies. Revisions were made accordingly. A random stratified sample of 109 student teachers was selected from a population of 281 Fall student teachers from 26 departments at Illinois State University. Response rate was low, 36 percent. It was assumed that because the survey was distributed just prior to the Thanksgiving break and the surveys were addressed to the cooperating teachers, not the student teachers, the response rate was adversely affected. Initial survey analysis indicated a need for further investigation into Bloodborne Pathogens Exposure Control Plan compliance measures of individual school districts.

A second questionnaire was developed by the authors in the Spring of 1995 concerning the degree of involvement of the cooperating teachers with their student teachers regarding Bloodborne Pathogens Exposure Control Plan compliance measures. The questionnaire consisted of six categorical and open-ended questions, addressing school type, procedures followed concerning the school district's Bloodborne Pathogens Exposure plan (who informs the student teachers and who shows the student teachers the location of a Universal Precautions kit), and which institution (university or school district) does the cooperating teacher believe to be responsible for the training informing of student teachers. Purpose of the questionnaire was stated and a brief explanation of the Illinois Health and Safety Act concerning the Bloodborne Pathogens Exposure Control training of state school district employees was provided for survey participants. Operational definitions were provided for Universal Precautions and cooperating teacher. Participation in the study was voluntary and confidential. Prior to survey distribution, Institutional Review Board approval for human subjects was obtained from Illinois State University. The survey was pilot tested by a group of secondary teachers for clarity, general organization, practicality of format, and any content inaccuracies. Revisions were made accordingly. Four hundred fifty-three Illinois cooperating teachers were sampled from the Illinois State University student teacher education program, with a response rate of 74 percent.

Results

Of the 39 respondents to the 1994 Fall survey, 41% could not define the term Universal Precautions. Thirty-six percent stated they obtained their knowledge of Universal Precautions from a first aid class, 26% from a school in-service, and 4% from their cooperating teachers (see Table 1, page 36). Forty-nine percent of the respondents were not shown the location of personal protective equipment provided in the Universal Precaution kits. Of the 51% who were shown the location of personal protective equipment, 75% were directed by their cooperating teachers.

Statistical analysis of the 1995 Spring survey of cooperating teachers reinforced prior research findings. Of the 335 respondents, 59% stated there were no uniform procedures to inform student teachers of the schools' Bloodborne Pathogens Exposure Control Plan. Forty-seven percent of respondents stated the cooperating teacher was responsible for implementing these procedures and 26% of the respondents stated the school nurse was responsible. Sixty-three percent stated student teachers were informed at Fall in-service trainings, 16% at Spring in-service, and 9% in both the Fall and Spring. Seventy

Table 1

Fall 1994 Questionnaire:
Method by which student teacher learned about Universal Precautions

Illinois State University first aid class	36%
In-service at student teaching site	26%
School Nurse	9%
Site Supervisor	4%
American Red Cross	4%
United States Army	4%
Previous job	4%
Other	13%

percent of the respondents stated student teachers were shown the location of personal protective equipment found in the Universal Precautions kit, with 61 percent of the cooperating teachers identifying themselves as responsible for showing student teachers the location. Fifty-three percent of the respondents believed it was the university's responsibility to inform train the student teachers of Universal Precautions, 15% believed it was the school district's responsibility, and 29% believed the responsibility should be shared by both the university and the school district. Overall, cooperating teachers believed it was the university's responsibility to train student teachers about Universal Precautions, while the individual school districts should then inform their student teachers about the Bloodborne Pathogens Exposure Control Plans specific to the district.

Discussion

Knowledge, prevention and increased awareness are the best resources currently available to lower the incidence rates of Bloodborne pathogens (Ryan, Jones, & Irvine, 1992). Until a cure for HIV AIDS becomes a reality we must continue to inform and educate as many individuals as possible. HIV AIDS and other bloodborne pathogens will affect all of us, either directly or indirectly (U.S. Department of Health and Human Services, Surgeon General and Centers for Disease Control, 1988). This project has been significant as it has heightened the awareness of an omission in adequately preparing undergraduate students in teacher education, that is, pre-service training in Universal Precautions. Many individuals were unaware of the student teachers' lack of preparation before engaging in their student teaching assignments and lack of school districts responsibility to inform the student teachers once they arrived at their student teaching sites about their Bloodborne Pathogens Exposure Control Plan. Unfortunately, an exposure incident may have to occur before action is taken by the professional preparation programs.

Conclusion

It is clear that no one understands where responsibility lies. Universities point to school districts and school districts point to universities. "Implications for pre-service and in-service HIV education are evident" (Cinelli, Sankaran, McConatha & Carson, 1992). The Centers for Disease Control as of 1989 recommended that Colleges of Education assure provision of pre-service instruction about HIV AIDS (White & Ballard, 1993).

However, with monetary cutbacks in state education funding, new and innovative means of meeting this objective become imperative and vital. Invaluable life-saving information training to the student teacher is a two-fold process. One, infusion of appropriate materials and pre-service training into the university curriculum better prepares the student teacher with issues relevant to Universal Precautions. Education about Universal Precautions could prevent the likelihood of an exposure incident occurring. However, the education does not stop with the university. For fulfillment of the process, the student teacher must utilize the knowledge gained at the university and initiate a follow-up with the cooperating teacher for information about the school's Bloodborne Pathogens Exposure Control Plan. With the process completed, the shared responsibility of both institutions (university and school district) for providing HIV education and for preventing bodily harm to come to the student teacher is achieved. The knowledge gained by the student teacher will not eliminate the chance an expo-

sure incident may occur. However, it will empower the student teacher with the knowledge necessary to make correct decisions when and if an exposure incident occurs.

References

Cinelli, B., Sankaran, G., McConatha, D., & Carson, L. (1992). Knowledge and attitudes of pre-service education majors about AIDS: Implications for curriculum development. *Journal Of Health Education, 23* (4), 204-208.

Fennell, R. (1991). Evaluating the effectiveness of a credit semester course on AIDS among college students. *Journal Of Health Education, 22* (1), 35-41.

Illinois State Board of Education. (1994). *The school code of Illinois*. St. Paul, MN: West Publishing Company.

Ryan, M.E., Jones, L., & Irvine, P. (1992). A research-based HIV AIDS education program via the university computer system: Bridge to prevention. *Journal Of Health Education, 23* (4), 198-203.

The Health and Safety Act. (1994). *Illinois Register*. Title 56: Labor and Employment, Chapter I: Department of Labor, Subchapter b: Regulation of Working Conditions, Part 350: Health and Safety. IL PA 87-245.

U.S. Department of Health and Human Services, Centers for Disease Control. (1988). Guidelines for effective school health education to prevent the spread of AIDS. *Morbidity and Mortality Weekly, 37*, 1-13.

U.S. Department of Health and Human Services, Surgeon General and Centers for Disease Control. (1988). *Understanding AIDS*. (HHS Publication No. (CDC) HHS-88-8404). Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services, Centers for Disease Control. (1992). *Business responds to AIDS*.

U.S. Department of Health and Human Services. (1990). *Healthy People 2000: National health promotion and disease prevention objectives*. (DHHS Publication No. 91-50212). Washington, DC: Author.

White, D.M., & Ballard, D.J. (1993). The status of HIV AIDS education in the professional preparation of pre-service elementary teachers. *Journal Of Health Education, 24* (2), 68-72.

Promoting Exercise Behaviors in Older Adults

Jean Henry

Abstract

About 50% of what we currently accept as the inevitable effect of aging is now more clearly understood to be hypokinesia, the degenerative and functional loss of muscle and bone tissue due to disuse (O'Brien & Vertinksy, 1991). Much of the functional loss from aging could be prevented or minimized through regular participation in physical activity (Barry & Eathorne, 1994; Burlew, Jones, & Emerson, 1991; Kligman & Pepin, 1992). Yet, it is reported that only 30% of those over age 65 exercise regularly (Elward & Larson, 1992). The incongruity between the benefits of activity and the percentage of elderly participating indicates a need to better understand what motivates older adults to exercise and what barriers may be preventing their participation. This paper reviews current literature and attempts to summarize the findings on barriers and motivations to exercise behavior in the elderly. Suggestions are made for practical application of the findings.

Introduction

By the year 2000, it is predicted that approximately 50% of all health care expenditures will be devoted to those 65 years of age and older (Mayer et al., 1994). The 1990 census reveals that the average annual growth rate for the population aged 65 years and over was more than twice that of the total population. By the year 2050, there will be 16 million individuals over the age of 85 years, representing as much as 5% of America's population (O'Brien & Vertinsky,1991). Among these older Americans, 80% suffer at least one chronic condition.

In attempting to address what appears to be an impending health care crisis, researchers often list the achievement of functional independence as an essential focus of any health promotion program for older adults (Barry & Eathorne, 1994; Brody, 1989; Perinni, Edelstein, & Barrett-Connor, 1994b; Ruffing-Rahal, 1991; Topp, 1991; Weinstein, 1988). Exercise is one of the interventions most often mentioned when suggesting strategies to help the elderly achieve this independence (Barry, Rich, & Carlson, 1993; Burlew et al., 1991; Elward & Larson, 1992; Kligman & Pepin, 1992; O'Brien & Vertinski, 1991). About 50% of what we currently accept as the inevitable effect of aging is now more clearly understood to be hypokinesia, the degenerative and functional loss of muscle and bone tissue. Hypokinesia is primarily a disease of disuse (O'Brien & Vertinsky, 1991). Researchers generally agree that many of the chronic conditions leading to reduced activity are prevented or alleviated through physical activity (Barry & Eathorne, 1994; Burlew et al., 1991; Kligman & Pepin, 1992). Kligman and Pepin (1992) contend that physical activity has proven to be more effective than surgical or pharmacological intervention for enhancing an individual's control over the aging process.

Improving the health status of older people will result in benefits to society as well as the individual. The provision of geriatric care accounts for a large portion of the national health budget, and that portion only promises to grow larger (Ujanov, Kohatsu, & Bohnstedt, 1991). Despite the support in the literature and within the health community for the effectiveness of exercise for all ages, research reflects that older Americans are not exercising enough. The 1990 health care objectives for the nation set a target of having 60% of the elderly participating in regular physical activity. However, among those over 65, 30% reported exercising regularly and fewer than 10% exercise vigorously (Elward & Larson, 1992).

Since research supports the position that exercise can improve quality of life, why do we see so few involved in activity programs? What can health educators do to change this pattern? The incongruity between the apparent benefits of physical activity for the elderly and the percentage of elderly exercising points to a need for a clear understanding of the factors that prevent older Americans from initiating physical activity programs. The purpose of this paper is to review these motivators and barriers as they are identified in the literature and provide practical suggestions for mediating their impact; thus, assuming the position that eliminating barriers will, in turn, promote exercise behaviors.

Benefits of Physical Activity

Recent epidemiologic evidence on the protective value of physical activity suggests it can prevent or delay physical and psychological conditions which commonly occur with aging. It has been shown to limit disability and loss of function in the symptomatic, and prevent recurrence of some conditions (Barry et al., 1993; Barry & Eathorne, 1994; Elward & Larson, 1992; Gillis & Perry, 1991; Kasch, Boyer, & Van Camp, 1990; Weinstein, 1988). Regular exercise is reported to be an effective nonpharmacologic therapy for stress, sleep disorders, depression, and anxiety, as well as some chronic conditions of aging such as arthritis, dementia, loss of bone density, hypertension, obesity, diabetes mellitus, coronary artery disease,

hyperlipidemia, and constipation (Barry et al., 1993; Barry & Eathorne, 1994; Kligman & Pepin, 1992).

The improvements in functioning attributed to exercise occur in organ systems that usually deteriorate with advanced age and become sources of complaint for older adults. The evidence that physical training alters the rate of actual biological aging is not clear. However, Topp (1991) believes that about half of the decline in functional capacity can be reversed through regular exercise. Research does show that physical training induces improvement in physiological performance. It also prevents the loss of bone mineral, helps to maintain range of motion and muscle mass, and other physical and psychological benefits (Barry et al., 1993; Topp, 1991). Since all these results help a person function more efficiently, it can be logically deduced that one's ability to independently perform the activities of daily living can be extended in time through participation in an exercise program. In Table 1, a comparison is made of the changes resulting from normal aging and the demonstrated benefits of physical activity and exercise in the elderly.

Motivations and Barriers to Exercise

There appear to be a myriad of factors that motivate older adults to initiate exercise behaviors. Several may exist at once and combine to produce a behavior (Pascucci, 1992). For example, one may choose to exercise because it is a healthy practice, but also due to enjoyment of a particular activity, such as walking. The Health Belief Model (HBM) postulates that knowledge and positive health beliefs motivate people to change behaviors (Hochbaum, 1958; Rosenstock, 1974). However, it is consistently demonstrated that knowledge alone does not necessarily result in behavior change. Carter, McKenna, Martin, and Andresen (1989) found that saliency of the information is often a better predictor of change. For example, simply educating the elderly that exercise is associated with better health is not persuasive, but the salient information that lack of exercise increases one's chance of dying of heart disease may prompt initiation. The HBM also recognizes that factors such as perceived barriers and demographic characteristics exert strong influences on our choices about behavior change. These may be particularly pertinent considerations for the elderly who, on the surface, might seem to be a fairly homogeneous group, but who are, in fact, an extremely heterogeneous population.

Research appears to widely concur that the elderly believe in the value of healthy personal behaviors, including exercise (Barry & Eathorne, 1994; Ferrini, Edelstein, & Barrett-Connor, 1994; Elward & Larson, 1992; Mayer et al., 1994; Pascucci, 1992). In fact, Ferrini, Edelstein, and Barrett-Connor (1994) reported that 79% of respondents in their study agreed with a statement about the importance of personal health prac-

Table 1

A Summary of Changes Resulting from Normal Aging Compared to Demonstrated Benefits of Physical Activity in the Elderly

Effects of Normal Aging	Benefits of Activity
increased calcium resorption	prevents loss of bone mineral
decreased maximum oxygen uptake	increased stroke volume and cardiac output
decreased hours of sleep	improved sleep patterns
decreased REM sleep	reduced risk factors for hypertension and atherosclerosis
decreased hormonal response to stress	reduced effect of stress
decreased gastric motility	increased gastric motility
decreased homeostasis in temperature regulation	improved mobility and balance
limitations in gait speed	improved cognitive function
decreased postural stability	decreased systolic blood pressure
	increased insulin sensitivity
	improved immune response
	improved balance and reaction time
	increased range of motion and muscle mass

tices. However, Larson (1992) reported that among those over age 65 only 30% exercise regularly - only half of the goal of 60% set by the 1990 health care objectives. Some of this discrepancy would appear to be explained by the further finding of Ferrini, Edelstein, and Barrett-Connor (1994) that 37% valued exercise and a good diet, but reported lack of or inconsistent participation due to a motivational problem.

Pasecucci (1992) conducted two studies with well-elderly to determine what motivated them to participate in health promotion activities. Health promotion, for this study, was defined as activities done to maintain or enhance well-being. Exercise was one of the activities included within this definition. The studies revealed the following ranking of reasons why older adults participate in health promotion activities: (1) feel good, (2) fitness and health, (3) socialization, (4) tie-appearance and pressure from others, (5) tie- independence and belongingness. The least favored responses were medical advice and fun.

Sonnet-Miller and Miller (1987) found that the perceived difficulty of adoption of a health behavior is a more powerful factor in likelihood of adoption than is perceived effectiveness. The more difficult (more barriers or greater the perceived cost) the older person perceives a certain behavior or activity to be, the less likely they are to make the effort required to adopt the behavior. There are a variety of barriers that inhibit older adults from participating in exercise (O'Brien & Vertinsky, 1991; Pasecucci, 1992; Pastorino & Dickey, 1990; Watkins & Kligman, 1993). Some of these barriers may be manipulated by the health educator. Among them are: (a) cost, (b) inconvenience - location and accessibility of facility, (c) lack of transportation, (d) characteristics of exercise and peer leaders, (e) personal safety concerns, and (f) myths and misconceptions about aging and exercise. In addition to focusing on motivational factors, health educators need to design specific strategies to address these barriers. Some factors, such as health status and genetics, are not subject to external control.

Kutner et al. (1992) proposed that a further barrier to major health promotion efforts directed toward the elderly is rooted, in part, in widely held myths that discourage including them in such efforts. Other researchers also place a share of the responsibility for low participation in health interventions by the elderly on myths, misconceptions, or inadequate knowledge held by both the elderly themselves, and health professionals about this growing segment of our population (Kligman & Pepin, 1992; O'Brien & Vertinsky, 1991; Weinstein, 1988).

Within the health and medical communities, commonly expressed myths and misconceptions include: (a) health promotion means the prevention of disease rather than improving health status; (b) old people are not able or willing to change their health attitudes, behaviors, or lifestyles; (c) behavioral or lifestyle changes in later life will have only minimal impact on the health and functioning of old people; (d) intervention is not cost effective for the elderly; and (e) fear of cardiac and or orthopedic complications. Misconceptions among the elderly are: (a) the declines experienced with aging are inevitable and irreversible; (b) exercise will wear out the body; (c) exercise is more of a health risk that a health precaution, (d) old age is a time to rest, and the need for exercise declines as one ages; and (e) they receive sufficient exercise doing daily activities and are tired out from just those efforts (Kutner, et al., 1992; O'Brien & Vertinsky, 1991). Held by the health care provider, myths and misconceptions deter prescribing or encouraging exercise. In the elderly, they negatively influence choices about exercise initiation and maintenance. Such myths must be dispelled if progress is to be made in motivating older adults to exercise.

Discussion

The illness and disability of their age peers, combined with personal exposure to chronic illness, serves as a potent reminder to older adults of the risks they face in maintaining an independent, autonomous lifestyle. As a result, motivation in this population may already be high (Ferrini et al., 1994). Some studies have found this to be so for health promotion, in general; however, it does not appear to be true for exercise, as the findings and statistics of this review point out. A variety of studies suggest that older adults may be overestimating the health risks of exercise participation while underrating the health promoting potential of physical activity.

One approach to motivating older adults to exercise involves helping them perceive the value of exercise to be greater than the cost. This means being proactive in identifying client needs and explaining how exercise can meet or satisfy these personal needs (motivation) at minimum cost (Burlew, Jones, & Emerson, 1991). By having the prospective participants identify potential barriers ahead of time, the health educator or exercise leader can design a program tailored to minimize or eliminate specific barriers. Older adults more readily accept programs that relate to their world as it is now and to needs they identified as priorities (Pastorino & Dickey, 1990). A practical method of program design would focus on variables (barriers) identified by participants that can be controlled and manipulated to facilitate exercise participation and maintenance.

An example of a successful program is reported by Mayer et al (1994) as a result of a preventive services intervention with Medicare beneficiaries in San Diego. This intervention used activity level and nutrition behaviors for measures of behavioral outcome. The preventive care group received selected clinical tests and immunizations, health risk appraisal with individual counseling, and a series of health promotion sessions. Specific to physical activity, participants were presented exercise information on particular topics and given skills training in such areas as determining target heart rate and improving flexibility. Even though activity was not a program emphasis for all participants, there was a 21% shift from sedentary to nonsedentary in the intervention group, compared to only 14% shift in the control group.

This project utilized several of the previously cited factors for motivating the elderly to become physically active. The fol-

lowing list includes some of these factors and adds intervention techniques reported by Mayer et al. pertinent to each. These are excellent examples of the ways in which health educators can utilize knowledge of motivational factors and barriers in the design of physical activity programs for older adults.

1) Use of peer leaders and peer role models - Each health promotion session included retired health professionals as part of the facilitation team.
2) Participant input into program design - Individual counseling based on screening and health risk appraisals was combined with personal preferences and desires to establish personalized goals and determine intervention priorities.
3) Personal safety concerns - Skills training in specific activities related to exercise was provided to all participants.
4) Opportunities for socialization - Health promotion sessions were conducted in a group format and participants were allowed to bring a significant other. Facilitators emphasized humor and laughter through the presentation of jokes and skits.
5) Dispelling myths and misconceptions - A strong knowledge component was a foundation of the program to ensure that participants were well informed about the facts and benefits of the recommended activities.

The importance of participant involvement in developing health behavior interventions and basing the content on issues that are most relevant to the target population is often overlooked. Programs should be tailored to the cultural, social, and psychological characteristics of the target population (Carter et al., 1989). Focus groups, nominal group process, interviews, surveys, and other feedback techniques should be utilized to find out what the older adult population wants. Assumptions should not be made for or about the elderly.

Conclusion

The ultimate goal of any health promotion effort should be improved quality of life. Among the program elements which have been identified as increasing the likelihood that the older adults will participate in exercise programs are: (a) opportunities for socialization, (b) reasonable cost, (c) convenience of the facility, (d) transportation available, (e) improving knowledge of the benefits of physical and ways to safely participate, (f) dispelling myths about exercise and the elderly, (g) incorporating activities directly related to improving ability to perform daily living tasks, (h) enthusiastic leadership, (i) peer leaders and role models, (j) personal input into program development, and (k) emphasis on safety - including environmental conditions, attention to existing personal physical limitations, and appropriate level and progression of activities (Barry et al., 1993; Barry & Eathorne, 1994; Ferinni et al., 1994a; Keller & Woolley, 1991; MacLeod & Stewart, 1994; Pascucci, 1992; Pastorino & Dickey, 1990; Ruffing-Rahal, 1991; Sennott-Miller & Miller, 1987; Watkins & Kligman, 1993).

Health care professionals face a challenge in keeping a large percentage of our population functionally independent and relatively healthy. The health care system in the United States remains oriented to the treatment of disease. Unless this attitude changes, resources for prevention and promotion will be limited. Determining why elderly participate or fail to participate in health promotion activities may allow further insight into health promotion strategies: thus, helping health educators design programs more salient to the needs of participants. Based on the findings of this review, if intervention is the goal, health educators must (a) take into consideration the heterogeneity of the elderly population, (b) provide exercise opportunities that utilize input of the elderly into program development, (c) improve the saliency of health promotion information, and (d) reduce the difficulty (perceived cost) of adopting exercise programs. It is in the best interest of both the elderly and society for health educators to use every means at their disposal to keep the vast majority of older adults healthy and needing only occasional, routine medical care. Exercise is an excellent tool for the job.

According to Barry and Eathorne (1994, p. 373), "... it is clear that a well-designed exercise program that is of low to moderate intensity may be the single, most cost-effective means of maintaining function." Chrisman (Burlew, Jones, & Emerson, 1991, p. 152) issued a strong statement of the importance of exercise to the elderly, saying, "There is no single effort that can help more to lowering medical bills, preventing hospitalization and depression and giving purposeful momentum to people who live beyond the employment years than to get them moving and help them continue to keep physically active."

References

Barry, H.C., Rich, B.S., & Carlson, R.T. (1993). How exercise can benefit older patients: A practical approach. *Physician and Sports Medicine, 21*, 124-140.

Barry, H.C., & Eathorne, S.W. (1994). Exercise and aging: Issues for the practitioner. *Medical Clinics of North America, 78*, 357-376.

Ben-Sira, Z. (1991). Eclectic incentives for health protective behavior: An additional perspective on health oriented behavior change. *Health Education Research, 6*, 211-229.

Brody, J.A. (1989, June). Toward quantifying the health of the elderly. *American Journal of Public Health, 79*, 685-686.

Burlew, L.D., Jones, J., & Emerson, P. (1991). Exercise and the elderly: A group counseling approach. *Journal for Specialists in Group Work, 16*, 152-158.

Carter, W.B., McKenna, M., Martin, M.L., & Andresen, E.M. (1989). Health education: Special issues for older adults. *Patient Education and Counseling, 13*, 117-131.

Heward, K., & Larson, E.B. (1992). Benefits of exercise for older adults: A review of existing evidence and current recommendations for the general population. *Clinical Geriatric Medicine, 8*, 35-50.

Emery, C.F., & Blumenthal, J.A. (1990). Perceived change among participants in an exercise program for older adults. *The Gerontologist, 10*, 516-521.

Ferrini, R., Edelstein, S., & Barrett-Connor, E. (1994). The association between health beliefs and health behavior change in older adults. *Preventive Medicine, 23*, 1-5.

Ferrini, R.L., Edelstein, S.L., & Barrett-Connor, E. (1994). Factors associated with health behavior change among residents 50 to 96 years of age in Rancho Bernardo, California. *American Journal of Preventive Medicine, 10*(1), 26-30.

Gillis, A., & Perry, A. (1991). The relationship between physical activity and health-promoting behaviors in mid-life women. *Journal of Advanced Nursing, 16*, 299-310.

Hochbaum, G.M. (1958). Public participation in medical screening programs: A sociopsychological study. *Public Health Service Publication No. 572*.

Kasch, F.W., Boyer, J.L., & Van Camp, S.P. (1990). The effect of physical activity and inactivity on aerobic power in older men (a longitudinal study). *Physician and Sports Medicine, 18*, 73-83.

Keller, J.M., and Woolley, S.M. (1991). Designing exercise programs with older adults: Theory and practice. *Activities, Adaptation, & Aging, 16*(2), 1-17.

Kligman, E.W., & Pepin, E. (1992). Prescribing physical activity for older patients. *Geriatrics, 47*(8), 33-47.

Kutner, N.G., Ory, M.G., Baker, D.I., Schechtman, K.B., Hornbrook, M.C., & Mulrow, C.D. (1992). Measuring the quality of life of the elderly in health promotion intervention clinical trials. *Public Health Reports, 107*, 530-540.

Lranov, L., Kohatsu, N., & Bohnstedt, M. (1991). Referral outcomes from a community-based preventive health care program for elderly people. *The Gerontologist, 31*, 543-547.

Mayer, J.A., Jernanovich, A., Wright, B.L., Elder J.P., Drew, J.A., & Williams, S.J. (1994). Changes in health behaviors of older adults: The San Diego Medicare preventive health project. *Preventive Medicine, 23*, 127-133.

MacLeod, P., & Stewart, N.J. (1994). Predictors of participation in a peer-led program for senior women. *Canadian Journal of Nursing Research, 26*, 13-25.

O'Brien, S.J., & Vertinsky, P.A. (1991). Unfit survivors. Exercise as a resource for aging women. *The Gerontologist, 31*, 347-357.

Pasecucci, M.A. (1992). Measuring incentives to health promotion in older adults: Understanding neglected health promotion in older adults. *Journal of Gerontological Nursing*, 16-23.

Pastorino, C.A., & Dickey, T. (1990). Health promotion for the elderly: Issues and program planning. *Orthopaedic Nursing, 9*(6), 36-42.

Rosenstock, I.M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs, 2*, 328-335.

Ruffing-Rahal, M.A. (1991). Rationale and design for health promotion with older adults. *Public Health Nursing, 8*, 258-263.

Sennott-Miller, L., & Miller, L.L. (1987). Difficulty: A neglected factor in health promotion. *Nursing Research, 36*, 268-272.

Topp, R. (1991). Development of an exercise program for older adults: Pre-exercise testing, exercise prescription and program maintenance. *Nurse Practitioner, 16*(10), 16-28.

Watkins, A.J., & Kligman, E.W. (1993). Attendance patterns of older adults in a health promotion program. *Public Health Reports, 108*, 86-91.

Weinstein, L.B. (1988). Exercise: A beneficial activity for older adults. *Activities, Adaptation & Aging, 11*(1), 85-94.

Collective Efficacy, Community-based Coalition, and Communities of Color

Pebbles Fagan

Abstract

Community-based coalitions serve as an effective strategy for achieving social change in communities of color. Health educators face complex challenges when facilitating the formation and the viability of a coalition. Collective efficacy is an unexplored concept which will help health educators achieve these outcomes. This paper discusses the role of collective efficacy in forming and sustaining coalitions and incentives that help shape collective efficacy. Focusing on collective efficacy in communities of color is likely to facilitate the social change process coalitions seek to achieve.

Introduction

The task of achieving social change in communities of color is an extremely complex challenge for community health educators. Communities of color, African-Americans, Asian Americans, Native Americans, and people of Hispanic origin only comprise a small percentage of the total U. S. population.[1] However, many of these communities suffer disproportionately from morbidity, mortality, and disability, health status indicators exacerbated by social, economic, educational, and political injustices. The unconscious pedagogy of disempowering actions by community members further complicates the challenge. The interactive effects of resident and systematic actions[2] result in the inadvertent impedance of the social change process required for disease prevention (Couto, 1994). Community health educators who seek to address health problems in communities of color are challenged to organize community forces to achieve social change.

Health educators can achieve social change in communities of color by facilitating the formation and viability of community-based coalitions. Community-based health coalitions are formal alliances among diverse organizations and individuals who agree to work together to achieve a common goal (Butterfoss, Goodman, & Wandersman, 1993). The salient belief about the potential effectiveness of coalitions is manifested in the rapid diffusion of coalitions in communities across the nation and the investment of millions of dollars by federal agencies and private foundations.

Coalitions require careful, conscious, slow and systematic planning (Stein, 1986) in light of their rapid diffusion. If properly planned, coalitions can be effective agents of health care reform by promoting concerted actions, and directing change in power relationships among community residents and between residents and systematic structures. The Southern Organizing Committee for Social Justice (SOC) and the West Alabama East Mississippi Community Action Network (Kerr & Lee, 1993) have demonstrated success in strengthening community support and activism on environmental health issues affecting communities of color. The Industrial Area Foundation (IAF) (Marquez, 1990) has helped improve social and economic conditions for Mexican Americans in Texas by gaining access to funds for community improvement. People United for a Better Oakland (PUEBLO) has influenced public health policy that facilitated the provision of immunizations, lead testing in children, and health services for monolingual immigrants (Sen, 1994). These coalitions have demonstrated that by rallying human resources, coalitions can create an avenue through which communities can apply pressure to local authorities to improve conditions (Stein, 1986), shape the health care system, and acquire material resources. The empowerment of communities of color is inherent in the collectivities of the disenfranchised and the disempowered (Cohen & Wagner, 1992).

Developing appropriate strategies for forming and sustaining coalitions in communities of color is the present and future challenge of community health educators. To achieve these outcomes, it is incumbent on health educators to advance the study of collective efficacy in the context of its systematic influences. Collective efficacy is not well studied in coalitions and deserves further investigation. This paper aims to enhance health educators' understanding of collective efficacy's role in forming and sustaining community-based coalitions in traditionally disempowered and disenfranchised communities of color.

Defining Collective Efficacy

The collective efforts of community residents will allow communities of color to manage complex challenges imposed by the social change process. Bandura (1986) states that the strength of social action lies in people's sense of collective efficacy. Collective efficacy, derived from Bandura's Social Learning Theory, is the judgment people make about a group's level of competence (Bandura, 1986). Collective efficacy, although rooted in self-efficacy, exceeds the individual judgments about the coalition's ability to achieve social change. Collective efficacy, an interpersonal property (Peeukonis & Wenocur, 1994) shared by the group, includes

group problem solving skills and the ability to improve community outcomes through collective efforts (Bandura, 1982). Perceived collective efficacy influences what people will choose to do as a group, how much effort they devote to a cause, and their staying power when the group fails (Bandura, 1986). Without collective efficacy, people cease trying even when the outcome is attainable (Bandura, 1986). Collective efficacy may be the most important concept in forming and sustaining community-based coalitions in communities of color.

Forming Coalitions in Communities of Color

The formation stage entails the convening of all potential stakeholders (Butterfoss et al., 1993) and the mobilization of community support. Formation begins with the entry of the community health educator into the community. At this stage, the primary goal is to define and developing an understanding of community interests. Organizers of the Association for Community Organizations for Reform Now (ACORN) surveyed communities to identify issues that interest residents (Stein, 1986); the IAF spoke with residents before asking them to attend meetings and volunteer (Marquez, 1990); and PUEBLO knocked on doors to meet with people in their homes, and talked to people in long supermarket lines and check cashing places (Sen, 1994). Even when these steps are taken, the health educator may not win the immediate adherence of the people (Freire, 1970). Familiarizing oneself with a community takes time. But once the health educators becomes more aware of these interests, the health educator can close the gap between factional interests of community members targeted for change and the gap between the organizers of the coalition and community members.

Health educators who are familiar with a community will recognize homogeneous and heterogeneous characteristics of a community that influence organization. A community may be heterogeneous to the extent that solidarity groups may be based on age (Bledsoe, Welch, & Sigelman & Combs, 1995), gender (Gutierrez & Lewis, 1994), religion (Ellison, 1991), socioeconomic status, and descent. These and other differences should not be minimized. However, health educators can draw on commonalties that motivate a community, including that of color. Solidarity based on color may be invisible to the outsider who is unfamiliar with the culture and history of a community (Stein, 1986). The root of this solidarity lies in the historical and existential experiences within systematic structures (Freire, 1970), and not in biological ethnocentrism. Native Americans, African Americans, and Hispanics can all relate to the environmental health injustices since their communities have traditionally been dumping sites for toxic wastes (Kerr & Lee, 1993). These communities have organized at the local level to address these concerns, and despite their heterogeneity, these communities of color have united under the People of Environmental Leadership Summit to build on local movements and develop a national movement which addresses environmental injustices in communities of color.

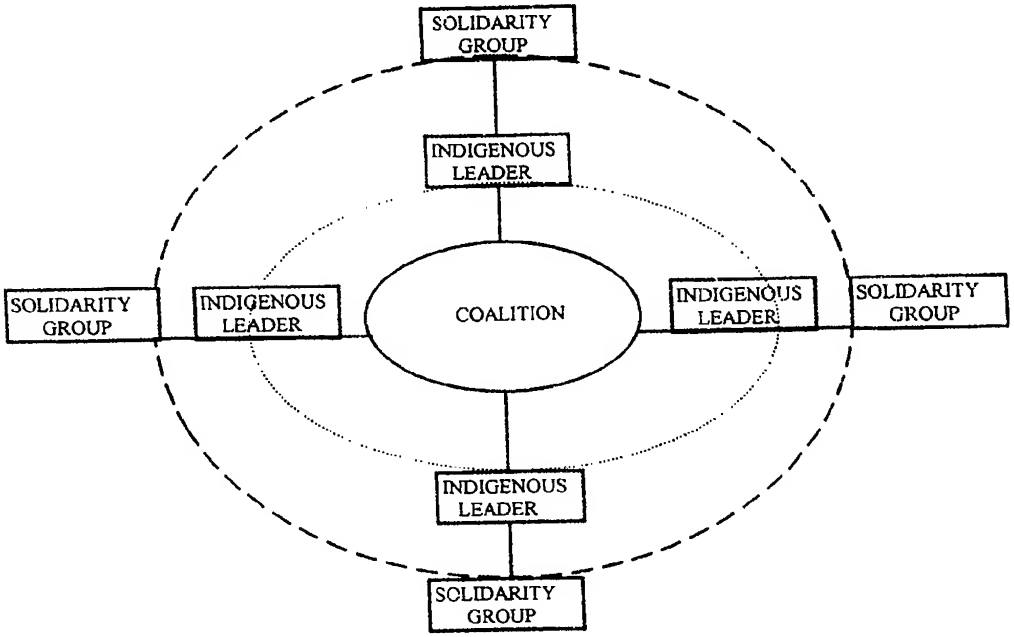
In addition, communities of color share norms, values, identity (Levine et al, 1992), and perceived community needs. The health educator can use what is known about these common experiences and solidarity to focus a community on issues that affect them. Ideal issues are ones that interest the most people, offend the fewest, are concrete, visible, and "winnable" (Stein, 1986). Issues with these characteristics set the stage for collective efficacy. A coalition will not be supported by the community if the health issues are not perceived as a priority to community members. Health educators will achieve greater success if they integrate community priorities into the coalition mission, goals, and objectives, which many coalitions lack (Gottlieb, Brink, & Gingiss, 1993), and develop a structure that attends to the language, traditions, symbolism, and value oriented discourse of the community (Stein, 1986). Feelings of collective efficacy can only be achieved if community members feel a part of the collective efforts.

Community leaders who are identified in the formation stage also play an integral role in recruiting members from the community to join the coalition. Health educators and other program planners often place "so called citizens from local communities who represent nothing except themselves" (Alinsky, 1967, p. 24) in positions of leadership. Community health educators risk collective efficacy in a coalition by placing perceived credible leaders who are not integrally, but superficially tied to individuals in communities of color. Identifying leaders who have existing ties with hard to reach audiences will help captivate these audiences in communities of color. Organizers of coalitions benefit by allowing community members to identify whom they perceive as leaders, rather than utilizing leader identification processes that do not involve community members. Leaders who are connected to existing solidarity networks based on age, race, gender, religion, or other factors, have the potential to reach diverse audiences in the community through the coalition. In the ACORN model, organizers identified existing solidarity networks and indigenous leaders of the community (Stein, 1986). Leaders and other members of these networks have social ties with people in other networks (see Figure 1). Through these social ties the coalition can recruit members (McPherson, Popielarz, & Drobnic, 1992). Leaders and other residents can pull members out of their existing solidarity groups and connect them to a broader group, the coalition (McPherson, Popielarz, & Drobnic, 1992). The diversity in leadership allows coalitions to maximize support and engender collective action. Collective efficacy may be enhanced by building on the existing community solidarity.

The leadership of the group can influence collective efficacy in other ways (Shamir, 1990). Effective leaders will challenge the feeling of helplessness and empower residents with a sense of collective efficacy. Raising questions that agitate a community will help break through accepted patterns (Alinsky, 1971). In addition, the leadership of a coalition can help train other coalition members and developing new leader-

Figure 1

Structural Relationship between the Coalition, Indigenous Leadership, and Solidarity Groups in a Community



ship. PUEBLO was successful in developing new indigenous leaders skilled in aspects of health care (Sen, 1994). Strategies that teach members how to manage their tasks in a perceived hostile environment will help achieve collective efficacy and reduce feelings of helplessness (Pecukonis & Wenocur, 1994). Without this power, people will not take charge of their own health conditions (Sen, 1994).

The external structural environment in communities of color affects collective efficacy and determines the formation of coalitions. Coalitions typically develop in environments with the least resistance (Gamson, 1964), where resistance may reveal itself through political, economic, educational, and social structures. Traditional community organization views a community problem as if it were independent of all other problems (Alinsky, 1941), yet the availability of health services, health behaviors, and conditions are linked to external structures. PUEBLO recognized that the provision of insurance, Congress, health care providers, and health institutions influence public health and were barriers for their community (Sen, 1994). Communities have often fought against these structures to improve their health conditions. Resistance of community members to collective struggles may result from previous bad experiences caused by unsophisticated treatment of socio-emotional complexes that arose in undertaking a particular struggle (Lichtenberg, Reimert, & Levine, 1982). Communities of color that have historically and repeatedly organized and persisted in efforts to change their community circumstances may have experienced failure or witnessed small insignificant gains. As a result, community members develop low outcome expectancies which are connected to the future actions of coalitions in communities of color. Health educators must recognize this challenge in the formation stage. Fears and frustrations can be translated into action (Freire, 1971). Alinsky (1967) says that when a community feels blocked, frustrated, and sees no way out of a situation, it blows. People of color must perceive that their collective efforts will be effective in achieving a particular outcome within community social, political, and economic structures.

Sustaining Community-based Coalitions

Initiating collective efforts through the formation of a coalition and generating an initial feeling of collective efficacy is only part of the challenge health educators face. Sustaining the collective efficacy for coalition viability in communities of color poses additional challenges. When people in the community join collective efforts, the reasons may include personal gain as well as gain for the collective group (Shamir, 1990). Sustaining community participation in a coalition and community support depends on whether or not benefits outweigh the costs of being involved in a coalition (Butterfoss et al., 1993). This perceived gain at the personal and the collective level influences collective efficacy.

Although an individual's personal experiences within the

health care system may influence their participation in a coalition. individual personal motives may also influence participation. Flynn and Webb (1975) found that women participated in activities related to public policy issues to keep busy, satisfy their psychological deficits, escape unpleasant circumstances, enhance personal growth, expand their horizons, and to increase productive activity of the community. Stein (1986) however, stated that group solidarity motivates members to participate even if selective benefits are not offered to them at the individual level.

Once coalitions are formed, community members will seek control over the circumstances that impede the social change process. However, social change is a long enduring process, where immediate gains may not evolve for a long time. In order to achieve significant gains, community members may attempt to gain control over circumstances which are immediate to them, which are other community members within the coalition. In traditionally disempowered communities, members may prescribe to the behavior of the oppressive system (Freire, 1970) and perpetuate oppressive action within the coalition by exercising invalidating power and authority. Health educators can avert this problem by encouraging the establishment of proximal goals for community members so that they can seek control over the issues that oppress them. Establishing proximal, winnable subgoals in conjunction with the broader coalition goals, will allow the coalition to establish a series of successes that eventually result in the achievement of the overall coalition goals. The establishment of successful past performances serves to increase the levels of self-efficacy (Bandura, 1977). This process may also serve to enhance collective efficacy in a coalition if the proximal goals are tied to the overall mission, goals, and objectives of the coalition. As the collective efficacy of the group increases, the coalition will feel more confident in its abilities to overcome more difficult challenges (Peeukonis & Wenocur, 1994).

Coalitions that try to sustain themselves in communities of color may face strong opposition from the political structures that fear their empowerment. This fear may translate into unsupportive action by dominant structures, when in fact, the coalition exists to collaborate with the dominant structures. PUEBLO initially experienced conflict when they asked doctors to perform routine lead testing in children (Sen, 1994). Phone calls, letters, and requests for this service were ignored by local officials even though training doctors to perform this test was required by law under the Child Health and Disability Prevention Program (Sen, 1994). A coalition of citizens in Long Beach, California who sought to provide affordable housing for the homeless, were met with political resistance by the city council which felt that they were not responsible for housing the homeless (Dowell & Farmer, 1992). These actions and activities of the hierarchical structures affect the progress of the coalition, and, thus, collective efficacy. Nelson (1994) suggests that a coalition in a politically unfavorable environment faces difficulty in achieving its outcomes even when the coalition goals, communal support, and strong leadership are present. In the same study, the sociopolitical climate facilitated the success of another coalition. Coalitions exist in a fluctuating political, social, and economic environment; coalition members may become frustrated with the ongoing battles they face, especially because people in communities of color have long awaited social change. Bandura (1986) supports that people with a sense of collective efficacy will mobilize efforts and resources to cope with the external obstacles they seek to change in spite of low outcome expectancies. Community health educators who develop strategies to shape collective efficacy may find that their coalition will persist longer than others despite low outcome expectancies.

Shaping Collective Efficacy

Shaping collective efficacy in communities of color requires that health educators focus on culturally appropriate strategies for community health programs. Shaping collective efficacy warrants further empirical investigation, but several strategies may be useful for health educators. Shaping collective efficacy requires that health educators enhance material, solidarity, and purposive incentives.

Solidarity incentives, those which are derived from the social interaction among members (Clark & Wilson, 1961), are useful in shaping the collective efficacy of the coalition. Making a contribution to collective efforts results in feelings of social acceptance, social recognition, and status (Shamir, 1990). Within dominant social structures, individual community-members may already feel ineffective; but if the coalition serves as a haven for social acceptance and enhances feelings of status in community members, members may feel more effective in gaining ground within the system as a group. Consciousness raising, an effective method for increasing group identity (Peeukonis & Wenocur, 1994), is defined as "the methods by which any oppressed group is taught to understand its conditions and to be activated politically for the revolutionary transformation of this condition" (Berger, 1976, p. 122). IAF used consciousness raising as a strategy to teach poor Mexican Americans how to think about problems and translate thoughts into action (Marquez, 1990). IAF was successful in raising people's expectations about themselves, their family, and their community, as well as helping people to cast away any self-imposed constraints (Marquez, 1990). Consciousness raising can be increased by holding public discussions, cultural and political activities that build group cohesiveness, and educating members about how the political, social, economic, and educational conditions affect the total health of their community. These activities should focus on building informal solidarity among members to incite participation and organizational solidarity (Stein, 1986).

Providing material incentives also serves to sustain collective efficacy. In disenfranchised and disempowered communities of color, many people may desire tangible returns on their persistent efforts. Individual incentives although advocated, may create a sense of competitiveness among members (Kameda,

Stasson, Davis, Parks, & Zimmerman, 1992). Rewards based on group performance are most beneficial to the coalition (Kameda et al., 1992) and act as a feedback mechanism by enhancing the cohesiveness of the group which is ultimately linked to group performance (Spink, 1990). Collective efficacy becomes salient when the entire identity of the coalition is advocated (Kameda et al., 1992) through incentives.

Purposive incentives, those derived from the suprapersonal goals of the organization, include the goals of improving the community, performing one's civic duty, and fulfilling a sense of citizen responsibility (Prestby, Wandersman, Florin, Rich, & Chavis, 1990). The most active participants are usually motivated by purposive incentive because they feel that they work toward improving their community (Rich, 1980). Achieving outcomes will help generate these feelings and, as a result, enhance collective efficacy.

Implications for Future Research

Community-based health coalitions hold promise for achieving social change in traditionally disempowered and disenfranchised communities of color. Health educators who work in communities of color will be challenged with barriers that complicate their role to help affect changes in health status indicators. Health educators working closely with their respective coalitions in communities of color can help form and sustain coalitions by focusing on the collective efficacy of a group (see Table 1)

Table 1

Summary of Important Steps to Building Collective Efficacy in a Coalition

FORMING A COALITION

- entering a community and defining community interests
- identifying leaders, existing solidarity, and potential organizational solidarity
- developing strategies to deal with initial effects of external structures

SUSTAINING A COALITION

- establishing proximal goals
- establishing a history of successful past performances
- developing strategies for the coalition to deal with conflict and negotiation with external structures

SHAPING COLLECTIVE EFFICACY

- enhancing solidarity incentives
- providing material incentives
- enhancing purposive incentives

Developing collective efficacy in the coalition formation stage includes establishing a fit between the interests of the community and the organizers, identifying and utilizing community leaders to shape collective efficacy, and developing strategies to deal with community perceptions of resistant external structures. Sustaining collective efficacy includes increasing the number of personal and group benefits of a coalition so that the benefits outweigh the costs of a coalition to a community, establishing winnable proximal goals, and helping coalitions adapt to the economic, political, and social changes in their community. To shape collective efficacy, health educators benefit by focusing on material, solidarity, and purposive incentives.

Future studies should examine the role of collective efficacy specifically in the context of the coalition. Measuring collective efficacy depends on how health education researchers operationalize this concept. Developing effective tools for measuring collective efficacy over time is another area of future research. Other variables such as learned helplessness, outcome expectancies, goals, and perceptions of the environment may further explain how collective efficacy influences the viability of a coalition in communities of color. The advancement of the study of collective efficacy will help validate the existence of coalitions and help move coalitions toward the desired outcomes in communities of color.

Footnotes

The 1990 U.S. Census data reports that African Americans comprise 12.1%, Native Americans, Eskimo, and Aleut comprise .8%, Asian or Pacific Islander comprise 2.9%, and those of Hispanic origin of any race comprise 9% of U.S. population.

Systematic actions include those of economic, political, educational, or social origin.

References

Alinsky, S. D. (1941). Community analysis and organization. *The American Journal of Sociology, 46*, 797-808.

Alinsky, S. D. (1967). The poor and the powerful. *Psychiatric Research Reports, 21*, 22-34.

Alinsky, S. D. (1971). *Rules for radicals*. New York: Random House.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191-215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-147.

Bandura, A. (1986). *Social foundations of thought and actions: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Berger, P. (1976). *Pyramids of sacrifice*. New York: Anchor Books.

Bledsoe, T., Welch, S., Sigelman, L., & Combs, M. (1995). Resident context and racial solidarity among African Americans. *American Journal of Political Science, 39*, 434-458.

ss, F. D., Goodman, R. M., & Wandersman, A. (1993). Comnity coalitions for prevention and health promotion. *Health ication Research, 8*, 315-330.
?. B., & Wilson, J. Q. (1961). Incentives systems: A theory of anizations. *Administrative Science Quarterly, 6*, 129-166.
M. B., & Wagner, D. (1992). Acting on their own behalf: iliation and political mobilization among homeless people. *rnal of Sociology & Social Welfare, 19*, 21-40.
R. A. (1994). Introduction. In R. A. Couto, N. K. Simpson, i. Harris, (Eds.), *Sowing the seeds in the mountain*. (NIH olication No. 943779, pp.1-8). Washington, DC: National ncer Institute.
, D. A., & Farmer, G. (1992). Community response to nelessness: Social change and constraint in local intervention. *rnal of Community Psychology, 20*, 72-83.
, C. G. (1991). Identification and separatism: Religious involvement and racial orientations among Black Americans. *iology Quarterly, 32*, 477-494.
J. P., & Webb, G. E. (1975). Women's incentives for commuy participation in policy issues. *Journal of Voluntary Action search, 4* (3-4), 137-146.
P. (1970). *Pedagogy of the oppressed*. New York: Conuum.
n, W. A. (1964). Experimental studies of coalition formation. L. Berkowitz (Ed.). *Advances in Experimental Psychology*, l. 1, (pp. 82-109). New York: Academic Press.
b, N. H., Brink, S. G., & Gingiss, P. L. (1993). Correlates of ition effectiveness: The Smoke Free Class of 2000 Program. *alth Education Research, 8*, 375-384.
rez, L. M., & Lewis, E. A. (1994). Community organizing with men of color: A feminist approach. *Journal of Community alth Practice, 1*(2), 23-45.
la, T., Stasson, M. F., Davis, J. H., Parks, C. D., & nmerman, S. K. (1992). Social dilemmas, subgroups, and motivation loss in task-oriented groups: In search of an optimal team e in division of work. *Social Psychology Quarterly, 55*, 47-.
M. L., & Lee, C. (1993). From conquistadors to coalitions. *uthern Exposure, 21*(4), 8-19.
Levine, D. M., Becker, D. M., Bone, L. R., Stillman, F. A., Tuggle, M. B., Prentice, M., Carter, J., & Filippeli, J. (1992). A partnership with minority populations: A community model of effective research. *Ethnicity and Disease, 2*, 296-305.
Lichtenberg, P., Reimert, C. R., & Levine, S. S. (1982). Social emotional keys to the division of power. *Journal of Sociology and Social Welfare, 9*, 503-510.
Marquez, B. (1990). Organizing the Mexican-American community in Texas: The legacy of Saul Alinsky. *Political Studies Review, 9*, 355-373.
McPherson, J. M., Popielarz, P. A., & Drobnic, S. (1992). Social networks and organizational dynamics. *American Sociological Review, 57*, 153-170.
Nelson, G. (1994). The development of a mental health coalition: A case study. *American Journal of Community Psychology, 22*, 229-255.
Pecukonis, E. V., & Wenocur, S. (1994). Perceptions of self and collective efficacy in community organization theory and practice. *Journal of Community Health Practice, 1*, 5-21.
Prestby, J. E., Wandersman, A., Florin, P., Rich, R., & Chavis, D. (1990). Benefits, costs, incentive management and participation in voluntary organizations: A means to understanding and promoting empowerment. *American Journal of Community Psychology, 18*, (1), 117-149.
Rich, R. (1980). The dynamics of leadership in neighborhood organizations. *Social Science Quarterly, 60*, 570-587.
Sen, R. (1994). Building community involvement in health care. *Social Policy, 24* (3), 32-43.
Shamir, B. (1990). Calculations, values, and identities: The sources of collective work motivation. *Human Relations, 43*, 313-332.
Spink, K. S. (1990). Group cohesion and collective efficacy of volleyball teams. *Journal of Sport and Exercise Psychology, 12*, 301-311.
Stein, A. (1986). Between organization movement: ACORN and the Alinsky model of community organization. *Berkeley Journal of Sociology, 31*, 93-115.
U. S. Department of Commerce Bureau of the Census. (1990). *Census of population general population characteristics*. Washington, D.C.: Government Printing Office.

Teaching Large Classes: Commentary from an Associate Instructor

Lisa K. Angermeier

Abstract

Teaching large classes is a job often bestowed upon graduate students who bring to their programs differing levels of ability and desire to teach. This is a commentary on my experience of teaching large classes. The first section of the manuscript addresses issues related to large classes, such as pursuing more personal contact with students, getting students more involved in the class, developing linkages throughout the department school, and creativity. The second section addresses issues more specific to associate instructors or teaching assistants. These topics are: training, respect of students, and multiple roles. Through this commentary, I hope to share ideas with those new to teaching in a way that is helpful and informative.

Introduction

A sea of one hundred inquisitive, fresh, bright faces stared expectantly at one frightened, apprehensive, inexperienced associate instructor. This was my first college teaching experience. My only previous teaching experience was in front of an aerobics class, which was quite different. Through guidance and support of faculty mentors, fellow associate instructors, reading, and students, I have grown to truly enjoy teaching. My initial experience and fear has led me to this project to share some of these insights for new and seasoned teachers to explore. My hope is that you will discover a new idea, or be reminded of one that has been forgotten.

The first section of my commentary addresses issues of teaching large classes. These issues are: pursuing more personal contact with students, getting students more involved in the class, developing linkages throughout the department school, and creativity. The second section addresses issues more specific to associate instructors or teaching assistants. These topics are: training, respect of students, and multiple roles.

Large Classes

What is a large class? Estimates in the literature range from 25 to 200 students (Wulff, Abbot, & Nyquist, 1987). Aronson (1987) noted that anything over 50 is a large class. Large is a relative term: If it feels large, then it is. If you are accustomed to teaching a class of 25 students and you are assigned a class of 45 students, that might "feel" large to you. Any of the following ideas can be utilized with classes of any size.

More Personal Contact with Students

Large classes can seem very impersonal for both teachers and students (Wulff, Abbott, & Nyquist, 1987). Establishing more personal contact with students can be a key to alleviating this problem. Accessibility of the instructor is facilitated by getting to class early and leaving late. This allows students time to approach the instructor with questions or comments. Accessibility is also fostered by greeting students at the door, especially on days that handouts are being given. This allows students to see the instructor as a person rather than as some unknown entity in the front of the room. Being available during office hours is important in promoting more personal contact with students. To encourage students to visit your office, perhaps offer one or two extra credit points to those students who come to your office to introduce themselves. From my experience, those students who utilize my office hours are the students I remember in class.

Communication is fundamental in every human interaction. Large classes can create barriers to effective communication from the perspective of both the student and the teacher. Electronic mail is an excellent avenue for communication (McKeachie, 1994). It is a quick way to answer basic questions about the course. It is convenient and can be done at any hour of the day - unlike phone calls. Distribution lists comprised of the students in the class can be compiled in order to disseminate information quickly to all students. For example, if there is a speaker coming to campus whose topic is relevant to the course content, a message can be sent to the distribution list.

Establishing a comfortable class climate sets the mood for the semester. Taking time at the beginning of the semester to do "ice breaker" activities is time well-spent. Some examples of ice breakers can be found in McKeachie's publication (1994). Students get to know one another on a first-name basis. Another method for establishing a more comfortable class climate is for the instructor to move away from the podium or overhead projector in the front of the room. Using a cordless microphone allows you to walk up and down the aisles when you are lecturing and interacting with students (Aronson, 1987).

Getting Students More Involved in the Class

Getting students more involved and interested in the class seems to be a never ending challenge for many teachers. I start out the semester by asking students to carefully review the topics on my syllabus. Then, I encourage them to share with me any topics that they did not see on the syllabus that they thought were going to be covered in the course. I look at their suggestions and add topics to the class where appropriate. This is a way to show students that you care about what they want to learn.

Before I have guest speakers in my class, I ask students to pose questions that they want the guest speaker to answer in his/her presentation. I type the questions and give them to the guest speaker before the presentation. This serves two purposes. First, it allows the guest speaker to tailor the presentation to the interests of the students. Second, it gives students "ownership" of the presentation.

Smith (1992) recommends giving students credit for actively participating in class discussion or asking questions. Each time a student asks or responds to a question, he/she receives credit for it. Students who participate make note of their contributions and hand them in at the end of each class period. This process can be facilitated by a classroom assistant who can monitor the students' contributions.

Developing Linkages

One of the classes that I teach is Stress Management. I have collaborated with the assistant director of the campus Student Academic Center to develop a linkage. This is a center on our campus that assists students who need extra help with their academic pursuits. Students in the Stress Management Class frequently express concern for the academic stressors they are facing in college, so we developed an Active Learning Portfolio (Chertkoff, Angermeier, & Huffer, 1995). The portfolio is comprised of lessons to help students deal with these academic stressors. Some of the lessons include: Listening and Taking Notes in Class, Taking Objective and Essay Tests, Reading Your College Text, and Studying for Final Exams. Through this portfolio and its lessons, we have created a linkage between the Stress Management Class and the Student Academic Center. This linkage allows students to be more aware of services offered on campus and to receive more individualized attention from the Student Academic Center Staff. This attention goes far beyond anything I could offer the students in the class. The lessons personalize the information from the class in a way that is virtually impossible for me to do by myself. What at one point seems like an impersonal point on an overhead, can now become real to the student.

Creativity

Being creative is challenging in large classes. It takes planning and organization to divide 150 students into small groups to complete an activity, for example. One way to do this is to post signs around the classroom that indicate certain stations. Each student then starts at a designated station and rotates around the room in an orderly fashion. In the Stress Management Class, for example, I might post six different stations around the room. These stations might consist of six different relaxation techniques we have practiced throughout the semester. At each station, the students have a specific task to complete in the time allotted. After the time is up at their first station, they rotate to the next station until every student has been to every station.

Discussion sections are another way to add creativity and variety to a large class (Knapper, 1987). They can focus on course topics, but bring them to a more personal level for the students. Discussion sections require a significant amount of time and energy not only in the selection of activities to engage in during the discussion, but also in terms of recruiting, training and monitoring discussion leaders.

Video clips of news programs or sitcoms are excellent vehicles to initiate class discussion. By using the video clips, the class has a shared experience from which to begin discussion either in the large class, smaller groups within the large class, or discussion sections.

The ways to be creative are endless, provided you spend time thinking about the class and the course content. One thing to keep in mind is that, in large classes, directions need to be explicit. Either distributing directions on a handout or making an overhead of them helps the activity flow much better.

Each of these ideas can be used by anyone teaching a large class, whether experienced faculty member or new associate instructor. We will now focus on issues pertaining more specifically to associate instructors.

Associate Instructor's Perspective

Training

Training for associate instructors is an important issue. Associate instructors come from a variety of backgrounds, some with teaching experience and some with none. The first step is to examine programs for training offered received by selected departments or universities. Another source of training which can be quite helpful is a faculty mentor. Faculty mentors can observe you teaching and give you feedback and suggestions. They can give you creative ideas and suggestions for teaching activities that have worked for them. Other associate instructors can be very supportive, as well (Puccio, 1987). They can not only be supportive by sharing overheads and content ideas, but also by offering emotional support. Training might be offered from other sources on campus such as Instructional Support Services (Wulff, Abbott, & Nyquist, 1993). These support services will often videotape your class and offer feedback on your teaching techniques. Reading about teaching is yet another way to gain knowledge (Weimer, 1990; Wright,

1989). Weimer (1990) offers several excellent sources of information on college teaching.

Respect of Students

Gaining the respect of students can prove to be more challenging for Associate Instructors than it is for faculty members. Our lack of experience, if not outwardly evident, is often harbored within ourselves. I often find myself being intimidated by students' questions. The best policy that I have found for dealing with this is to tell the students that I do not know the answer, but I will find it for them. Turning questions back to students is another way. Ask them what they think about that question. I have also struggled with only being a few years older than most of the students. Therefore, it is important to dress professionally and to have students address me by using my full name rather than using my first name only. This reinforces to them that I am their instructor. The flipside to this need for some formality is maintaining a sense of comfort and approachability for the students.

Multiple Roles

In many instances associate instructors find themselves juggling multiple roles in the department. Perhaps an associate instructor teaches his her own class, assists a professor in another class and has classes of his her own to attend. This can be mind-boggling, to say the least. I do not think there is one easy answer to this dilemma. From my experience, talking to people who have recently been through similar circumstances as you, fellow associate instructors, allows you to verify that what you are going through is "normal" and manageable (Puccio, 1987). They can be excellent resources for offering ways to cope with multiple roles. One of the best pieces of advice I have received during my graduate work is to "smell the roses." It is necessary to have a life outside of teaching, assisting, and school no matter how impossible that might seem. As Margaret Mead once said, "We shouldn't just teach all of our lives; we should do other things as well" (Simpson, 1987, p. 20).

Conclusions

I have learned about teaching from faculty mentors, associate instructors, and reading. I began my college teaching career with no experience. I was excited about teaching from the beginning, but extremely fearful and naive. Without the help and support of my mentors and colleagues, I would probably be frozen in that frightened mode forever. I hope that through sharing the preceding ideas with you, that you realize you are not alone and that teaching is a skill that can be fostered through hard work and supportive colleagues. Teaching as a graduate student offers its own unique dilemmas and rewards. I feel a significant sense of accomplishment when I can look back on a semester and realize how much I have accomplished in my multiple roles. I do not want to forget how helpful and influential my students have been over my tenure as an associate instructor. I have learned about teaching from their feedback and evaluations. I will soon be leaving the role of an associate instructor, but I will forever carry with me the knowledge and insight I have gained through mentors, colleagues, reading, and my students.

References

Aronson, J.R. (1987). Six keys to effective instruction in large classes: Advice from a practitioner. In M.G. Weimer (Ed.). *Teaching large classes well* (pp. 5-15). San Francisco, CA: Jossey-Bass.

Chertkoff, S., Angermeier, L., & Huffer, M. (1995). *College and lifelong learning: Active learning portfolio*. Unpublished manuscript, Indiana University.

Knapper, C. (1987). Large classes and learning. In M.G. Weimer (Ed.). *Teaching large classes well* (pp. 5-15). San Francisco, CA: Jossey-Bass.

McKeachie, W.J. (1994). *Teaching tips* (9th ed.). Lexington, MA: D. C. Heath.

Puccio, P. (1987). TAs help TAs: Peer counseling and mentoring. In N. V. Chism & S. B. Warner (Eds.). *Institutional responsibilities and responses in the employment and education for teaching assistants* (pp. 219-223). Columbus, OH: Center for Teaching Excellence.

Smith, D.H. (1992). Encouraging students' participation in large classes: A modest proposal. *Teaching Sociology, 20*, 337-339.

Simpson, R.D. (1987). Keeping excitement in teaching. *Innovative Higher Education, 12*, 16-21.

Weimer, M. (1991). The birth and growth of a college teacher. In K.G. Lewis (Ed.). *The TA experience: Preparing for multiple roles* (pp. 422-429). Slitter, OK: New Forums Press.

Wright, D.L. (1989). TA training resources. In J. D. Nyquist, R.D. Abbott, & D.H. Wulff (Eds.). *New Directions for Teaching and Learning* (No. 39, pp. 125-133). San Francisco, CA: Jossey-Bass.

Wulff, D.H., Abbott, R.D., & Nyquist, J.D. (1987). Students' perceptions of large classes. In M. G. Weimer (Ed.). *Teaching large classes well* (pp. 5-15). San Francisco, CA: Jossey-Bass.

Wulff, D.H., Abbott, R.D., & Nyquist, J.D. (1993). Preparing TAs for their instructional roles by developing collaborative relationships between an instructional development center and administrators, departments and TAs. In K. G. Lewis (Ed.). *The TA experience: Preparing for multiple roles* (pp. 98-106). Stillwater, OK: New Forums Press.

Reviewers

Dr. Michael Barnes
Department of Health Science
Box 30001 Dept. 3HLS
New Mexico State University
Las Cruces, NM 88003-0001

Dr. Robert Bensley
Dept. of Health, PE & Recreation
4024 Student Recreation Center
Western Michigan University
Kalamazoo, MI 49008

Dr. David Birch
Department of Applied Health Science
Poplars 616
Indiana University
Bloomington, IN 47405

Dr. Rodney Bowden
Kinesiology and Health Science
Health and Physical Education Complex
Stephen F. Austin State University
Nacogdoches, TX 75961

Dr. Joanne Chopak
Department of Health Science Education
Landrum Box 8075
Georgia Southern University
Statesboro, GA 30460-8075

Dr. Jeffrey K. Clark
Dept. of Physiology and Health Science
Cooper Science CL325
Ball State University
Muncie, Indiana 47306

Dr. Vicki Cleaver
College of Public Health
PO Box 26901
University of Oklahoma
Oklahoma City, OK 73190

Dr. G. Brian Colwell
Department of Health and Kinesiology
158-P Read
Texas A & M University
College Station, Texas 77843-4243

Dr. Steve Dorman
Department of Health Science Education
4 FGL
University of Florida
Gainesville, FL 32611

Dr. Eugene Fitzhugh
Dept. of Health, Leisure, & Safety Studies
1914 Andy Holt Avenue
University of Tennessee
Knoxville, TN 37996-2710

Dr. Fern Goodhart
Department of Health Education
Hurtado Health Center
Rutgers University
New Brunswick, NJ 08903

Dr. Dawn Graff-Haight
Department of Public Health Education
P.O. Box 751
Portland State University
Portland, OR 97207

Dr. Bonni Hodges
Department of Health
Box 2000
SUNY at Cortland
Cortland, NY 13045

Dr. William V. Hyman
Department of Health and Kinesiology
P.O. Box 2176
Sam Houston State University
Huntsville, Texas 77341

Reviewers (cont.)

Dr. Susan Massad
Department of Health Studies
263 Alden Street
Springfield College
Springfield, MA 01109-3979

Dr. Kelli McCormack-Brown
Department of Health Sciences
106B Moulton Hall
Illinois State University, 5220
Normal, IL 61790-5220

Dr. Kweethai Chin Neill
Department of Health and Kinesiology
P.O. Box 2176
Sam Houston State University
Huntsville, Texas 77341

Dr. Anthony V. Parrillo
Department of Health Education
Minges Coliseum, A-11
East Carolina University
Greenville, North Carolina 27858

Dr. Robert M. Weiler
Department of Health Science Education
P.O. Box 118210
University of Florida
Gainesville, FL 32611-8210

Dr. Bryan Williams
UMDNJ-PERC
EOHSI, Room 236
681 Frelinghuysen Rd.
Piscataway, NJ 08855-1179

Contributors

Ofelia Alvarado is a senior in the Division of Community Health Education and a member of Delta Chapter at San Diego State University, San Diego, California 92106.

Lisa K. Angermeier is a doctoral student in the Department of Applied Health Science and a member of Nu Chapter at Indiana University, Bloomington, IN 47405.

Mariaclara Ecora F. Bago is a masters student in the Department of Health Science Education and a member of Alpha Lambda Chapter at the University of Florida, Gainesville, Florida 32611-8210.

James T. Broadbear is a doctoral student in the Department of Applied Health Science and a member of Nu Chapter at Indiana University, Bloomington, Indiana 47405.

Pebbles Fagan is a doctoral student in the Department of Health and Kinesiology and a member of Alpha Pi Chapter at Texas A & M University, College Station, Texas 77840.

Jean Henry is a doctoral student in the Department of Health Studies and a member of Alpha Phi Chapter at Texas Woman's University, Denton, Texas 76204-5499.

Roberta L. Lyons and **Debra L. O'Connell-Bartges** are both seniors in the Department of Health Sciences and members of Omega Chapter at Illinois State University, Normal, Illinois 61790-2450.

Lisa Nicole Pealer is a masters student in the Department of Health Science Education and a member of Alpha Lambda Chapter at the University of Florida, Gainesville, Florida 32611-8210.

Casey Ann Reeves is an undergraduate student in the Department of Health and Kinesiology and a member of Alpha Pi Chapter at Texas A & M University, College Station, Texas 77840.

Ursule R. Smith is a masters student in the Department of Physiology and Health Science and a member of Alpha Chapter at Ball State University, Muncie, Indiana 47306.

Susan S. Thomas is a masters student in the Department of Health Science Education and a member of Alpha Lambda Chapter at the University of Florida, Gainesville, Florida 32611-8210.

ETA SIGMA GAMMA
CL325
2000 University Avenue
Muncie, Indiana 47306

ADDRESS CORRECTION REQUESTED

NON-PROFIT ORG.
U.S. POSTAGE
PAID
Muncie, Ind.
Permit No. 141

END

U.S. Dept. of Education

Office of Educational
Research and Improvement (OERI)

ERIC

Date Filmed
May 17, 1997

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☒ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").